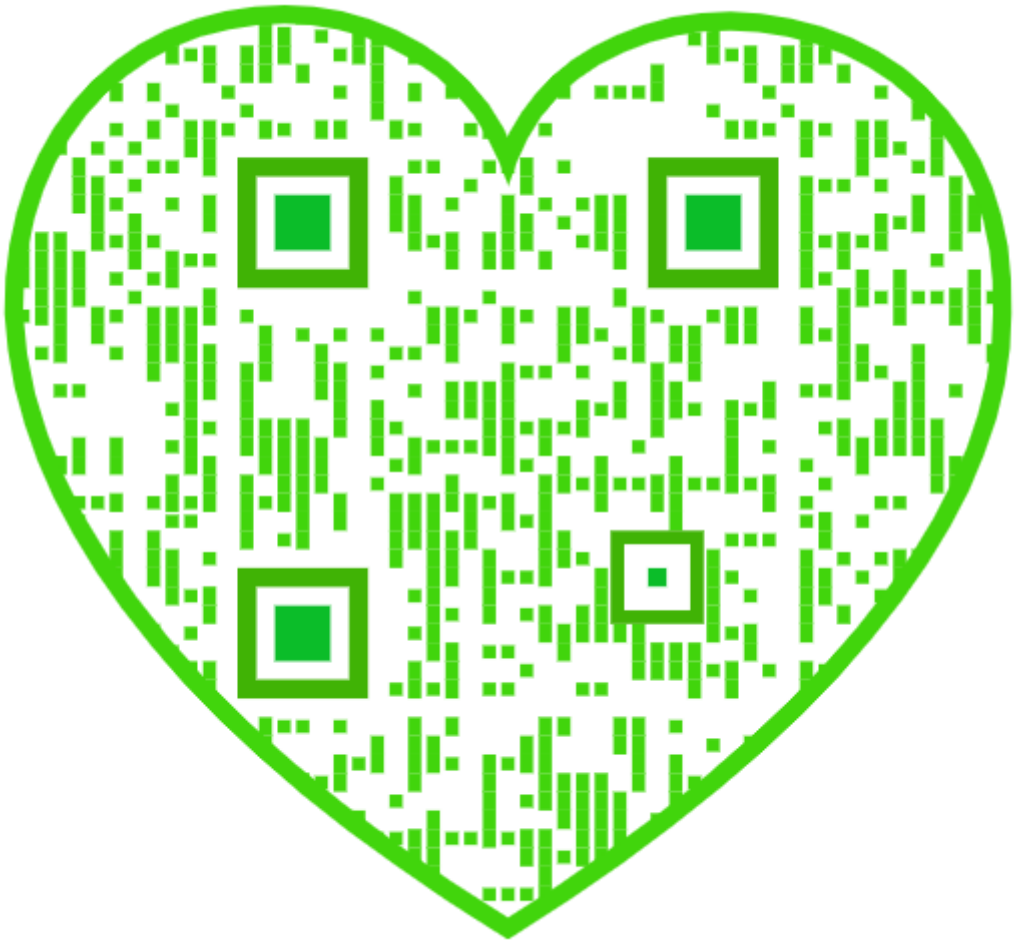

PRACTICAL

MATERIA MEDICA

AND

PRESCRIPTION WRITING

WITH ILLUSTRATIONS

BY

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TO HIS

FATHER AND MOTHER

A KNOWLEDGE OF WHOSE HIGH IDEALS, UNSELFISH AMBITIONS, AND UNSWERVING DEVOTION TO DUTY HAVE PROVEN A NEVER-FAILING SOURCE OF INSPIRATION

THIS VOLUME IS AFFECTIONATELY DEDICATED

BY

THE AUTHOR

PREFACE TO SECOND EDITION.

In the Second Edition the effort has been made to bring the text up-to-date, particularly with reference to the Pharmacopœial changes. Some new drugs have been added, both official and otherwise; some have been retained that are now not official, and, following the Pharmacopœia, many have been dropped, with a sigh of relief. Much new matter has been added that it is hoped will prove of value.

Acknowledgments are made of many valuable criticisms and suggestions, particularly from Dr. John Taylor Halsey, Professor of Pharmacology and Clinical Medicine, in Tulane University.

O. W. B.

PREFACE TO FIRST EDITION.

IN the treatment of disease a physician is usually confronted with the following problems which must be considered in the order given:—

What is the true condition of the patient?

What changes should be produced in that condition?

What agents will best effect those changes?

In what form and by what methods should those agents be employed to obtain the best possible results?

How should his orders for those agents be written so as to serve the best interests of the patient and his associates?

The first three of these propositions are exhaustively treated in many excellent volumes and are ably taught in the medical schools, but the last two of the propositions are often neglected.

For example—the student is taught how to diagnose certain blood conditions, the changes that should be effected, and that Iron is the drug to bring about these desired results. It is often neglected to impress upon the student what preparations of iron will best meet the demands of particular conditions, the precautions to be observed in employing them, how to correctly prescribe them, alone or in combination, and, if in combination, with what forms or preparations of the other agents; how to order for the safest, most convenient and agreeable administration; how to use the correct names, conveniently estimate the proper quantities, the best hours for administration, and the many other matters an ignorance of which may render the physician unable to properly put to practical use his knowledge of the other departments of medical science. Such instruction is the particular object of this book.

The purpose has been to handle the subject-matter in such a practical way as to render the work a dependable one for every-day service.

The author wishes to express his indebtedness to other writers from whose works he has, in some instances, had to draw. The volumes of particular assistance in compiling this work were: The U. S. Pharmacopœia, Remington's Pharmacy, Useful Remedies (A. M. A.), Wilcox's Materia Medica and Pharmacy, the U. S. Dispensatory, The National Formulary, Merck's Index, Shoemaker's Materia Medica and Sollmann's Pharmacology. The writer is also much indebted to the publishers and authors who kindly allowed the use of the prescriptions from their works; acknowledgments are made to these in each case in footnotes.

O. W. B.

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DEFINITIONS.

Familiarity with the following definitions is essential to a correct understanding of a treatise on Materia Medica.

Acid.—A compound composed of hydrogen with an electronegative element or group of elements and possessing the following properties: It contains hydrogen that can be replaced by a metal or base to form a salt; it changes the color of litmus from blue to red; it has (when soluble in water) an acid or sour taste. Examples: Sulphuric acid, hydrochloric acid, citric acid.

Acetum (Acet.)—Vinegar.—The vinegars are solutions of medicinal substances in diluted acetic acid. There is one official vinegar. They are seldom prescribed.

Alcohol.—As a class name it means a hydrocarbon radical in combination with the radical OH. As a name for a definite substance it means ethyl alcohol.

Aldehyde.—A compound intermediate between an alcohol and acid. A hydrocarbon radical in combination with the radical COH. Example: Acetic aldehyde.

Alkali.—A metallic oxide (except ammonia) that has the property of combining with an acid to form a salt, or with an oil to form soap. Examples: Caustic soda, caustic potash.

Alkaloid.—A basic substance, usually the active principle of a plant, and composed of carbon, hydrogen, nitrogen, and, usually, oxygen. Examples: Quinine, morphine, strychnine.

Alterative.—An agent that will restore deranged nutritive processes. Examples: Corrosive mercuric chloride, calomel, arsenic trioxide, and potassium iodide are usually placed in this class.

Anaphrodisiac.—An agent that will depress the sexual function. Examples: Bromides, opium, monobromated camphor.

Anesthetic.—An agent that will produce insensibility to pain or touch. According to action, they are subdivided as general and local. Examples: General—ether, chloroform, ethyl chloride. Local—cocaine, novocaine, phenol.

Anodyne or Analgesic.—An agent that will relieve pain. Examples: Morphine, codeine, acetylsalicylic acid.

Antacid.—An agent that will neutralize acidity. Examples: Magnesium oxide, sodium bicarbonate.

Anthelmintic.—An agent used in the treatment for intestinal worms. Examples: Santonin, phenyl salicylate, thymol.

Antiemetic.—An agent that will prevent or arrest vomiting. Examples: Cocaine, peppermint, bismuth subnitrate, cerium oxalate.

Antigalactagogue.—An agent that lessens the secretion of milk. Belladonna, probably all hydragogue purgatives.

Antilithic.—An agent that prevents the formation or favors the removal of stones or calculi in the urinary or biliary tracts. Examples: Lithium citrate, hexamethylenamine, alkaline waters, and glycerin are usually placed in this class.

Antimalarial.—An agent that will prevent or relieve malaria. Examples: Quinine, arsenic.

Antiphlogistic.—An agent that tends to relieve inflammation. Examples: Cataplasma of kaolin, ichthyol.

Antipyretic or Febrifuge.—An agent that will reduce febrile temperatures. Examples: Quinine, antipyrine, acetylsalicylic acid.

Antirheumatic.—An agent that will prevent or relieve rheumatism. Examples: Sodium salicylate, acetylsalicylic acid, colchicum.

Antiscorbutic.—An agent that will prevent or relieve scurvy. Examples: Citric acid, orange-juice.

Antiseptic.—An agent that will prevent the growth or arrest the development of micro-organisms. Examples: Sodium benzoate, boric acid, or almost any germicide in diluted form.

Antisialagogue or Antisialic.—An agent that lessens the flow of saliva. Examples: Belladonna, sodium bicarbonate.

Antispasmodic.—An agent that will relieve muscular spasm. Examples: Morphine, atropine, asafetida, bromides.

Antisyphilitic.—An agent that will prevent or relieve syphilis. Examples: Mercury, arsenic, iodides.

Antizymotic.—An agent that will prevent or arrest fermentation. Examples: Salicylic acid, alcohol.

Aperient.—A very mild purgative. Examples: Honey, potassium bitartrate, magnesium oxide. The term seems to be particularly applied to mild purgative waters.

Aphrodisiac.—An agent that will increase sexual desire or power. Examples: Nux vomica, phosphorus, alcohol, and cantharides are usually placed in this class.

Aqua—Water; Medicated Water.—Used in this sense a water is an aqueous solution of a volatile substance. They usually contain only a comparatively small percentage of the active drug. Many of them are merely water saturated with a volatile oil. They are used more as vehicles and to give odor and taste to solutions. There are nineteen official waters.

Astringent.—An agent that will produce contraction or condensation of tissue: Examples: Alum, tannic acid, ferrous sulphate.

Balsams.—Natural resinous substances derived from plants, and containing benzoic, cinnamic or analogous acids. Examples: Balsam of Peru, Balsam of Tolu.

Bark.—The outer cover of the woody parts of a plant. Examples: Cinchona, wild cherry, cascara sagrada.

Base or Basic Substance.—A compound usually composed of a metal with oxygen, or oxygen and hydrogen, and possessing the following properties: With an acid it forms a salt; it has (when soluble in water) an alkaline taste and reaction.

Bulb.—A short, thick, underground stem, composed of layers. Example: Squill.

Carminative.—An agent that will remove gases from the gastro-intestinal tract. Examples: Asafetida, peppermint, cardamom.

Cathartic.—An active purgative, usually producing several evacuations, and may or may not be accompanied by pain or tenesmus. Examples: Castor oil, calomel, cascara sagrada.

Caustic.—An agent that will destroy living tissue. Examples: Silver nitrate, potassium hydroxide, nitric acid.

Ceratum—Cerate.—Cerates are unctuous substances of such consistency that they may be easily spread, at ordinary temperature, upon muslin, or similar material, with a spatula, and yet not so soft as to liquefy and run when applied to the skin. They are not often prescribed. Three cerates are official.

Charta Paper.—Papers are preparations intended principally for external application, made either by saturating paper with medicinal substances or by applying the latter to the surface of the paper by the addition of some adhesive liquid. These should not be confounded with chartula, meaning "a little paper" folded so as to form a receptacle containing a dose of a medicinal substance. There is no official paper.

Cholagogue.—A purgative that stimulates the flow of bile. Examples: Calomel, inspissated oxgall, sodium glycocholate, and sodium taurocholate are usually placed in this class.

Collodium—Collodion.—These are preparations intended for external use, having for their base a solution of pyroxylin or gun-cotton, in a mixture of ether and alcohol. Three are official.

Confectio—Confection.—Confections are saccharine soft solids in which one or more medicinal substances are incorporated with the object of affording an agreeable form for their administration and a convenient method for their preservation. They are not often prescribed, and are not official.

Corm.—A short, solid, underground stem. Example: Colchicum.

Counterirritant.—An agent that is applied locally to produce inflammatory reaction, with the object of affecting some other part usually adjacent to or underlying the surface irritated. Examples: Mustard, chloroform, cantharides.

Decoctum—Decoction.—Decoctions are liquid preparations made by boiling vegetable substances with water. When the strength and method of preparation are not otherwise specified, they are made by boiling 5 parts of the coarsely comminuted drug for fifteen minutes with enough water to make 100 parts. There are no official decoctions.

Deliriant or Delirifacient.—An agent that will produce delirium. Examples: Hyoscine, atropine.

Demulcent.—An agent that will soothe the part to which applied. The term is usually restricted to agents acting on mucous membrane. Examples: Mucilage of acacia, mucilage of tragacanth, milk.

Deodorant.—An agent that removes odor. Examples: Potassium permanganate, chlorine, hydrogen peroxide.

Depressant.—An agent that will depress a body function. According to action they are subdivided as motor, cerebral, etc. Examples: Bromides, aconite, hydrated chloral.

Diaphoretic or Sudorific.—An agent that will increase perspiration. The term sudorific is usually confined to those active agents that cause drops of perspiration to collect on the skin. Examples: Pilocarpine, opium, camphor.

Digestant.—An agent that will digest food or aid in digestion. Examples: Pepsin, pancreatin.

Disinfectant.—An agent that destroys the organisms capable of producing disease. Examples: Formaldehyde, sulphur dioxide, phenol, iodine.

Diuretic.—An agent that increases the flow of urine. Examples: Hexamethylenamine, theobromine sodiosalicylate, potassium acetate.

Drastic.—A very active purgative, usually producing many evacuations, and accompanied by pain and tenesmus. Examples: Croton oil, elaterin.

Ecbolic or Abortifacient.—An agent that will cause the pregnant uterus to expel its contents. Examples: Ergot, cotton-root bark, tansy.

Elixir (Elix.)—Elixir.—Elixirs are aromatic, sweetened, spirituous solutions containing small amounts of medicinal substances. They constitute one of the most commonly used classes of preparations, and contribute largely toward the possibility of pleasant medication. The National Formulary contains many of the more popular formulæ, but only two elixirs are official.

Emetic.—An agent that will cause vomiting. Examples: Apomorphine hydrochloride, ipecac, sodium chloride, mustard.

Emmenagogue.—An agent that stimulates the menstrual function. Examples: Viburnum, preparations of iron, manganese dioxide, ergot.

Emollient.—An agent that will soften and soothe the part when applied locally. The term is usually confined to agents affecting the surface of the body. Examples: Ointment of rose-water, petrolatum, olive oil.

Emplastrum (Emplast.)—Plaster.—Plasters are preparations for external application, and of such consistency that they require heat in spreading them, and adhere to the skin when applied. They are not often prescribed. Seven plasters are official.

Emulsum (Emul.)—Emulsion.—Emulsions are aqueous liquids in which immiscible substances are held in suspension by the use of some viscid agent. The immiscible substance is usually an oil and the viscid agent is usually a gum. There are four official emulsions.

Epispastic.—An agent that, applied locally, will produce a serous or puriform discharge by exciting inflammation. Examples: Red mercuric iodide, iodine.

Errhine.—An agent that will increase the secretion of the mucous membrane lining the nose. The term is usually employed as synonymous with sternutatory. Examples: Quillaja, salicylic acid.

Escharotic.—An agent that will destroy tissue with the production of a slough. The term is often used synonymously with caustic, but

usually indicates a more extensive action. Examples: Arsenic trioxide, zinc chloride.

Ester or Compound Ether.—A substance composed of an alcohol and acid radical in combination with O. Examples: Acetic ether, amyl ether.

Ether.—As a class name it means a substance composed of two alcohol radicals in combination with O. As the name of a definite substance it means ethyl ether.

Excitant.—An agent that will excite a special function of the body. They are subdivided according to action as motor, cerebral, etc. Examples: Alcohol, strychnine, cocaine.

Expectorant.—An agent that facilitates the removal of the secretions of the bronchopulmonary mucous membrane. Examples: Ammonium chloride, ammonium carbonate, ipecac. Expectorants are sometimes classed as sedative expectorants and stimulating expectorants.

Extractum (Ext.)—Extract.—Extracts are solid or semi-solid preparations produced by evaporating solutions of vegetable principles. The official extracts are either powders or soft solids. The majority of them can be obtained in powdered form and many prescribers prefer them that way. Extracts are usually about five times the strength of the crude drug. Twenty-five are official.

Flower.—That part of a plant which comprises the organs of reproduction. Examples: Arnica, anthemis, matricaria.

Fluidextractum (Flext.)—Fluidextract.—These are solutions of the soluble constituents of organic drugs of such strength that each mil represents 1 gramme of the drug. The majority of the fluidextracts contain a comparatively large percentage of alcohol and many of these give precipitates with water. Most of them contain tannic acid; so, should not be used with agents incompatible with that drug. Forty-nine fluidextracts are official.

Fruit.—A product of a plant for the propagation of its kind. It is the seed usually with the part containing it. Examples: Colocynth, vanilla, capsicum.

Galactagogue.—An agent that stimulates the secretion of milk. Examples: Mild malt drinks.

Germicide.—An agent that will kill germs. Examples: Phenol, corrosive mercuric chloride, potassium permanganate, iodine.

Glucoside.—A substance (usually of vegetable origin) that is capable of being split up into two or more simpler bodies, one of which is glucose. Examples: Santonin, salicin, digitalin.

Glyceritum (Glyc.)—Glycerite.—Glycerites are solutions of medicinal substances in glycerin. They are not often prescribed. Five glycerites are official.

Gum.—An amorphous, non-volatile solid or soft-solid substance obtained as a natural exudate from a plant, and possessing the properties of being more or less soluble in water, insoluble in alcohol and, when moist, having adhesive qualities. Examples: Acacia, tragacanth.

Gum-resin.—A natural mixture of gum and resin. Examples: Asafetida, myrrh.

Hæmatinic.—An agent that will increase the hematin in the blood. Example: Iron.

Hæmostatic.—An agent that will arrest bleeding without being directly applied to the bleeding area. Examples: Calcium lactate, horse-serum, ergot.

Herb.—A plant of tender, juicy nature, only living one season. Examples: Peppermint, lobelia, pennyroyal.

Hydragogue.—An agent that produces watery evacuations of the intestinal contents. Examples: Magnesium sulphate, solution of magnesium citrate, sodium phosphate.

Hypnotic.—An agent that will produce sleep. Examples: Sulphonethylmethanum, morphine, hydrated chloral.

Infusum (Inf.)—Infusion.—Infusions are liquid preparations made by treating vegetable substances with either hot or cold water. The drug is not subjected to boiling, as in making decoctions. When the strength and method of preparations is not otherwise specified, they are made by treating 5 parts of the coarsely comminuted drug with boiling water to make 100 parts. Two are official.

Irritant.—An agent which, when used locally, produces more or less local inflammatory reaction. Examples: Iodine, chloroform, mustard.

Laxative.—A mild purgative, usually producing one or two evacuations without pain or tenesmus. Examples: Olive oil, liquid petrolatum, and small doses of many of the more active purgatives.

Leaf.—A plant organ usually shooting out from the side of a stem or branch. Usually somewhat flattened and oval in shape and green in color. Examples: Belladonna, hyoscyamus, digitalis.

Leaflet.—One of the subdivisions of a compound leaf. Examples: Senna, pilocarpus.

Linimentum (Lin.)—Liniment.—Liniments are liquid preparations for external use and usually applied with rubbing. Eight are official.

Liquor (Liq.)—Solution.—This class consists of aqueous solutions of non-volatile subtances. They present the greatest variety in strength, character, and method of preparation. They are usually very active medicinal preparations. There are twenty-five official solutions.

Lithontriptic.—An agent that tends to dissolve calculi in the urinary or bile tracts. Examples: Lithium citrate, potassium citrate, and ammonium benzoate are usually placed in this class.

Massa (Mas.)—Mass.—Masses are soft-solid preparations for internal use, and of such consistency that they may be molded into pills. They are frequently prescribed alone or with other agents, and may be given in pill form or put into capsules. Two masses are official.

Mistura (Mist.)—Mixture.—This class includes the aqueous liquid preparations intended for internal use, and containing suspended insoluble substances. They should always be shaken before using. There are two official mixtures.

Mucilago (Mucil.)—Mucilage.—These are thick, viscid, adhesive liquids, containing gum or mucilaginous principles dissolved in water. They are usually employed to hold insoluble substances in suspension in aqueous liquids. There are two official mucilages.

Mydriatic.—An agent that will dilate the pupil of the eye. Examples: Atropine, homatropine hydrobromide.

Myotic.—An agent that will contract the pupil of the eye. Examples: Physostigmine, pilocarpine.

Narcotic.—An agent that will cause stupor. Examples: Morphine, hydrated chloral.

Neutral Principle.—A proximate principle of neutral reaction, not otherwise classified. Examples: Aloin, elaterin.

Nutrient.—An agent that supplies to the body material for building tissue. Examples: Codliver oil, olive oil, gelatin, milk.

Oil.—A greasy liquid not miscible with water, usually obtained from a vegetable or animal source. According to character, they are subdivided principally as fixed and volatile (or essential). Examples: Fixed—castor oil, olive oil, codliver oil. Volatile—oils of mustard, peppermint, rose.

Oleatum—Oleate.—Oleates are preparations made by dissolving metallic salts or alkaloids in oleic acid. One is official.

Oleoresin.—A natural mixture of oil and resin. Examples: Oleoresins of aspidium, turpentine, ginger.

Oxytocic.—An agent that hastens the process of labor. Examples: Pituitrin, quinine.

Parasiticide.—An agent that will kill parasites. Examples: Sulphur, iodine, mercurial ointment.

Pilulæ (Pil.)—Pills.—Pills are small, solid bodies of a globular, ovoid or lenticular shape, which are intended to be swallowed and thereby produce medicinal action. They may be ordered to be made extemporaneously by the druggist, or the ready-prepared pills may be used. The latter usually are coated with sugar, gelatin, chocolate, etc. The gelatin-coated pills are the most desirable, as a rule, for many reasons. Pills are hardly prescribed as much as formerly. Administration of drugs in capsules possesses all the advantages and few of the disadvantages of the older method. There are, of course, some exceptions to this rule, as will be noted elsewhere. Seven pills are official.

Protective.—An agent that will mechanically protect the part to which applied. Examples: Collodion, plasters.

Pulvis (Pulv.)—Powder.—The official powders are mixtures of powdered medicinal substances. Seven are official.

Purgative.—An agent that will cause an evacuation of the intestinal contents. Examples: Calomel, castor oil, magnesium sulphate.

Pustulant.—An agent that will produce pustules. Examples: Croton oil, antimonium and potassium tartrate.

Reconstituent Tonic.—An agent that improves or strengthens one or more parts or functions of the body by replacing lost material. Examples: Iron, phosphorus, calcium.

Refrigerant.—An agent which, when taken by mouth, produces a sensation of coolness. Examples: Peppermint, spearmint, fruit juices. Refrigerants usually tend to allay thirst.

Resin.—An amorphous, non-volatile solid or soft-solid substance, obtained as a natural exudation from or by treatment of plants. It is prac-

tically insoluble in water, but soluble in alcohol. **Examples:** Guaiac, rosin.

As a class name, with the exception of the official "Rosin," a resin is a powder consisting principally of the resinous principles of a vegetable drug. They are prepared by adding water to the alcoholic preparation of a drug and collecting, drying, and powdering the precipitate; so they consist of those principles which are soluble in alcohol and insoluble in water. Four are official.

Resorbent.—An agent that tends to promote the absorption of abnormal matter, as exudates or blood-clots. **Examples:** Potassium iodide, ammonium chloride.

Restorative.—An agent that restores lost tone or function. **Examples:** Preparations of iron, arsenic, mercury, etc.

Rhizome.—A more or less underground and horizontal root-stem of a plant. Examples: Hydrastis, valerian, ginger.

Root.—The underground part of a plant. Usually applied to the principal underground plant axis. Examples: Stillingia, glycyrrhiza, belladonna.

Rubefacient.—An agent that, when applied to the skin, produces redness. Examples: Chloroform, mustard, menthol.

Saline.—A mineral salt that will produce an evacuation of the intestinal contents. Examples: Magnesium sulphate, sodium sulphate, potassium and sodium tartrate.

Sedative.—An agent that will allay irritability or excitement. According to action, they are subdivided as general, local, nervous, vascular, etc. Examples: Bromides, morphine, codeine, hydrated chloral.

Seed.—The part of the fruit containing the germ. Examples: Nux vomica, mustard, colchicum seed.

Sialagogue.—An agent that increases the flow of saliva. Examples: Pilocarpine, potassium iodide, citric acid.

Spiritus (Spir.)—Spirit.—Spirits are alcoholic solutions of volatile substances. Most of them contain matter insoluble in water. While there is no uniform strength for spirits, they are usually about 5 to 10 per cent. Fifteen are official.

Stearopten.—A concrete or solid substance obtained from a volatile oil. Examples: Menthol, thymol.

Sternutatory.—An agent that will cause sneezing. Examples: Quillaja, salicylic acid.

Stimulant.—An agent that will excite one or more portions of the body. These agents are usually subdivided as to special action, as cerebral stimulants, cardiac stimulants, etc. Examples: Atropine, strychnine, caffeine.

Styptic.—An agent that will arrest bleeding when applied locally. Examples: Ferrous sulphate, alum, tannic acid, iodine.

Suppositoria (Suppos.)—Suppositories.—Suppositories are solid bodies intended to be introduced into the rectum, vagina, or urethra to produce medicinal action. This is often a very convenient and efficient form for administering remedies and, with the exception of the official glycerin

suppository, they are usually better prepared extemporaneously by the pharmacist. Oil of theobroma is the vehicle usually employed with the medicinal substances, and the amount of this should be left to the discretion of the compounder. One is official.

Syrupus (Syr.)—Syrup.—Syrups are concentrated solutions of sugar in water or aqueous liquids. They usually do not represent a very high percentage of the active drug. Some are used merely to give a pleasant odor and taste to solutions. There are twenty-two official syrups.

Tabellæ (Tab.)—Tablets.—Tablets are small, disk-like masses of medicinal powders.

Tablet Triturates (T. T.) are made by moistening the powder with a volatile liquid, as alcohol, and then molding into shape and allowing the liquid to evaporate. They are seldom made to contain more than 1 grain of the active agent. They will usually disintegrate readily and are a very desirable form for administering certain drugs.

Coated Tablets are usually made by coating compressed tablets with sugar, chocolate, etc. (S. C. T.; C. C. T.; G. C. T.).

Compressed Tablets (C. T.) are made by forcibly compressing the powdered substances into the desired shape. They are usually made to contain from 1 to 10 grains of the active drug. They are frequently very hard and sometimes not readily soluble.

Dispensing Tablets (D. T.) are those that contain a comparatively large amount of the active drug, as 1 grain of strychnine sulphate. They are used by pharmacists and dispensing physicians to avoid the necessity of weighing small amounts of a potent drug in filling prescriptions. There is one official tablet.

Hypodermic Tablets (H. T.) are usually made as are tablet triturates. They frequently contain, in addition, some agents that produce chemical action when water is added and cause a rapid disintegration of the mass.

Tænifuge or Tæniafuge.—An agent that will effect the removal of tapeworms. Examples: Pelletierine tannate, oleoresin of male fern.

Tinctura (Tinct.)—Tincture.—Tinctures are alcoholic solutions of nonvolatile substances (tincture of iodine is an exception). They are the most commonly used class of preparations. They usually contain tannic acid; so, in most instances, cannot be employed with agents that are incompatible with that drug. Those tinctures that contain much resinous matter or oils will precipitate with water. Some examples are tinctures of ginger, benzoin, guaiac, etc. Tinctures of the most potent drugs usually represent 10 per cent. of the crude drug, as tinctures of opium, digitalis, aconite, etc. Where more than a fluidrachm of a 10 per cent. tincture would have to be taken to get a dose of the drug, the tincture is usually made to represent 20 per cent., or more, of the agent.

As to the dosage, the majority of tinctures can be roughly put into two groups: those the dose of which is about 10 minims and those of fluidrachm doses. Fifty-four tinctures are official.

Tonic.—An agent that improves or strengthens one or more parts or functions of the body. According to action these are subdivided as general, cardiac, etc. Examples: Preparations of iron, arsenic, digitalis.

Trituratio (Trit.)—Trituration.—Triturations are powdered preparations containing 10 per cent. of the active drug and 90 per cent. of sugar of milk. One is official.

Trochisci (Troch.)—Troches.—Troches, or lozenges, are solid, discoid, or cylindrical masses consisting chiefly of medicinal powders, sugars, and mucilage. They are intended to be used by placing them in the mouth and allowing them to remain until, through slow solution or disintegration, their purpose of mild medication is effected. They are not often prescribed. Five troches are official.

Tuberous Root.—A thickened primary root. Examples: Aconite, jalap.

Unguentum (Ung.)—Ointment.—Ointments are fatty, soft-solid preparations intended to be applied to the skin by inunction. Twenty ointments are official.

Vermicide.—An agent that will kill intestinal worms. Examples: Santonin, thymol.

There can be no sharp distinction between the last two terms, and they are used as practically synonymous.

Vermifuge.—An agent that will effect the removal of intestinal worms. Examples: Castor oil, calomel, jalap.

Vesicant.—An agent that will produce blisters. Examples: Mustard, cantharides.

Vinum—Wine.—The medicated wines are solutions of medicinal substances in wine. They are not often prescribed. None are official.

INTRODUCTION TO PART I.

In the following pages are included all official drugs, also some few others that are frequently employed by prescribers.

In the case of the frequently used agents the effort has been made to give complete information as to how to employ them to meet the conditions for which they are commonly used. No effort has been made to show the use in each disease, but only to give the practical information and illustrations that will enable the busy practitioner to apply theory, and, sitting at the bedside, write prescriptions for the well-known medicinal agents in a way that will reflect credit on himself and serve the best interest of the patient.

Drugs that are seldom prescribed are not discussed in detail.

While this is not intended as a work on therapeutics, the prescriptions given are selected from many thousands and are, with few exceptions, formulæ that are of tried therapeutic merit. The therapeutic indications in the index are arranged to convert this part of the work into a formulary of considerable scope.

Effort has been made to have each prescription correct from every standpoint, and so given that it can be transcribed on a prescription blank, letter for letter, and sent to the drug-store—a document above criticism.

PART I.

Materia Medica.

ACACIA.

Latin, Acacia (Gen., Acaciæ; Abbrev., Acac.). Eng., Acacia. Synonym, Gum Arabic. A dried, gummy exudation from *Acacia senegal,* and of other African species of *Acacia.* These are trees growing in Africa.

Form.—A gummy solid substance that is marketed in the form of translucent masses (tears), granular powder or fine, white powder. The granular form is the most convenient for general use.

Odor and Taste.—Almost odorless and tasteless.

Solubility.—Soluble in water; insoluble in alcohol.

Incompatibles.—Should not be prescribed with strongly alcoholic liquids, ammonia, lead subacetate, solutions of ferric salts, or sodium borate.

Dose.—Ad libitum.

Official Preparations.

Mucilago Acaciæ (Gen., Mucilaginis Acaciæ; Abbrev., Mucil. Acac.). Eng., Mucilage of Acacia. Acacia, 350 Gm.; Distilled Water, to make 1000 Gm.

Syrupus Acaciæ (Gen., Syrupi Acaciæ; Abbrev., Syr. Acac). Eng., Syrup of Acacia. Acacia, 100 Gm.; Sugar, 800 Gm.; Distilled Water, to make 1000 mils.

Also used in several other official preparations.

Average Dose.—4 fluidrachms (15 mils).

Therapeutic Action.—Demulcent.

Uses.—Chiefly used to give viscosity or body to liquids, so that after shaking the bottle insoluble matter will remain suspended long enough for a dose to be poured out before it settles. It is also a favorite emulsifying agent and is sometimes used for its demulcent properties.

Mucilage of acacia does not keep well, particularly in warm weather, and preparations containing it often spoil in a few days.

Administration.—The following will illustrate some common modes of prescribing:

In the treatment of stomatitis (child 3 years old):

℞[1]		or
Potas. Chloratis	gr. xxiv	1|50
Tinct. Myrrhæ	♏x	|65
Syr. Acaciæ	f℥j	30|00
Aquæ	q. s. f℥iij	90|00

M.
Sig.—Teaspoonful every three hours.

In the treatment of the diarrhea of typhoid fever:

℞[2]		or
Bismuthi Subnit.	gr. clx	10|0
Phenolis Liq.	♏viij	|5
Tinct. Opii Deod.	f℥j	4|0
Mucil. Acaciæ	f℥j	30|0
Aquæ	q. s. f℥iv	120|0

M.
Sig.—Teaspoonful every three hours. (Shake-label.)

In the treatment of acute bronchitis:

℞[3]		or
Terebeni	f℥ij	8
Creosoti	f℥ss	2
Acaciæ	q. s.	
Aquæ Chloroformi	q. s. f℥iij	90

M. ft. emul.
Sig.—Teaspoonful with water every four hours.

ACETANILIDUM.

Latin, Acetanilidum (Gen., Acetanilidi; Abbrev., Acetanil.). Eng., Acetanilid. Synonym, Antifebrin. Formula, C_8H_9ON. A derivative of aniline.

Form.—Shining, crystalline laminæ or crystalline powder.

Odor and Taste.—Odorless and almost tasteless.

Solubility.—In 190 parts of water or in 3.4 parts of alcohol.

Incompatibles.—Alkaline bromides and iodides in aqueous solutions, chloroform, hydrated chloral, phenol, resorcin, thymol, spirit of nitrous ether.

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[1] **Anders: Practice of Medicine.**
[2] **Hughes: Practice of Medicine.**
[3] *Ibid.*

Average Dose.—3 grains (0.2 Gm.).

Therapeutic Action.—Analgesic, antipyretic, antiseptic.

Uses.—At one time acetanilid was the principal constituent of most proprietary headache remedies. The present requirements of the federal and state drug laws and the press campaign against it have now largely restricted its employment in proprietaries. Its chief use by the profession is in the treatment of certain forms of headache. Sometimes used to reduce fever and in antiseptic dusting powders and ointments.

Toxicology.—Poisoning by the coal-tar antipyretics is usually diagnosed by the history of an excessive amount of headache medicine having been taken. Some of the symptoms are: cyanosis; cold, moist skin; weak pulse; general depression. There may be a skin eruption. Treatment consists in emptying the stomach and stimulating, usually by ammonia, caffeine, strychnine, etc. The patient should be kept warm.

Administration.—Acetanilid is usually prescribed in capsules or powders.

The following illustrates some of the best combinations for administering the drug:

The following has been recommended for headache:

℞[1]		or	
Acetanilidi	gr. xxxvj	2	25
Caffeinæ Citratæ, Camphoræ Monobromatæ	āā. gr. vj		40
Sodii Bicarbonatis	gr. xxiv	1	50

M. ft. cap. no. xij.
Sig.—One every half-hour until six (6) are taken.

The remaining capsules may be ordered to be taken every few hours as indicated.

In the treatment of postanesthetic vomiting:

℞[2]		or	
Cocainæ Hydrochlor.	gr. j		065
Acetanilidi	gr. x		650
Cerii Oxalatis	gr. xx	1	300

M. ft. cht. no. iv.
Sig.—One every two hours when indicated.

[1] Musser and Kelly: Practical Treatment.
[2] Ashton: Practice of Gynecology.

Acetanilid is sometimes ordered in aromatic spirit of ammonia, as in the following, which has been extensively used for headache, nervousness, hiccough, etc., particularly when following alcoholism:

℞		or
Acetanilidi	3ss	2
Spir. Ammon. Arom.	f3iv	15
Caffeinæ Citratæ	gr. xvj	1
Sodii Bromidi	gr. lxxx	5
Elix. Aromatici	q. s. f3ij	60

M.

Sig.—Two (2) teaspoonfuls in water every two hours until relieved.

This is written in the order in which it should be prepared by the compounder.

Acetanilid is sometimes prescribed in suspension, as in the following, which has been employed in the beginning of colds:

℞		or
Pulv. Acetan. Co.	gr. xxx	2|0
Ammonii Carb.	gr. xxiv	1|5
Tinct. Hyoscyami	f3j	4|0
Spir. Vini Gallici	f3ij	60|0
Syr. Tolutani	q. s. f3iij	90|0

M.

Sig.—Tablespoonful in water every three hours until relieved. (Shake-label.)

The preparation does not present a very elegant appearance, but seems clinically of value.

Compressed tablets are kept by pharmacists, containing from 2 to 5 grains of the drug, either alone or with agents, as citrated caffeine, etc. They are often very hard and undesirable.

Acetanilid is sometimes used with other agents in dusting powders, as:

℞		or
Acetanilidi Pulv.	3j	4
Acidi Borici	3ij	8
Amyli	q. s. 3j	30

M. tere bene.

Sig.—Apply as directed.

Some ointments are shown in the following:

In the treatment of erythema:

℞[1]		or
Acetanilidi,	gr. xxx	2|0
Acidi Borici	gr. xx	1|3
Adipis Lanæ Hyd.	ʒss	15|0
Ung. Aquæ Rosæ	q. s. ʒj	30|0

M.
Sig.—Apply thin several times daily.

As a bland ointment in the treatment of comedo:

℞[2]		or
Acetanilidi	gr. xx	1|3
Bismuthi Subnit.	ʒj	4|0
Ung. Aquæ Rosæ	q. s. ʒj	30|0

M.
Sig.—Apply as directed.

In the treatment of erythema scarlatiniforme:

℞[3]		or
Cocainæ Hydrochlor.	gr. iv	·2|6
Acetanilidi	gr. xx	1|3
Zinci Oxidi	ʒiss	6|0
Ung. Zinci Oxidi	q. s. ʒij	60|0

M.
Sig.—Apply thin on a cloth.

ACETONUM.

Latin, Acetonum (Gen., Acetoni; Abbrev., Aceton.). Eng., Acetone. A colorless liquid containing not less than 99 per cent. by weight of absolute Acetone.

Therapeutic Action.—Said to be anesthetic and hypnotic.

Uses.—Acetone is extensively used in pharmaceutical manufacturing, but is not often a prescription ingredient.

ACETPHENETIDINUM.

Latin, Acetphenetidinum (Gen., Acetphenetidini; Abbrev., Acetphen.). Eng., Acetphenetidin. Synonym, Phenacetin. Formula, $C_{10}H_{13}O_2N$. A coal-tar derivative.

Form.—White scales or white crystalline powder.

Odor and Taste.—Almost odorless and tasteless.

[1] Ohmann-Dumesnil: Diseases of the Skin.
[2] Ohmann-Dumesnil: Diseases of the Skin.
[3] *Ibid.*

Solubility.—In 1310 parts of water or 15 parts of alcohol.

Incompatibles.—Hydrated chloral, iodine, phenol, salicylic acid, and oxidizing agents.

Average Dose.—5 grains (0.3 Gm.).

Therapeutic Action.—Analgesic, antipyretic, sedative.

Uses.—Extensively employed for the relief of headache. Used in the treatment of colds, "grip," tonsillitis, bronchitis, etc., either to relieve pain or reduce temperature or both. Sometimes used for nervousness. It is considered safer than acetanilid.

Administration.—Owing to the lack of odor and taste and its limited solubility it is prescribed almost exclusively in capsules or powders.

Acetphenetidin when used alone may be ordered as:

℞		or	
Acetphenetidini	3ss		2|

Ft. cht. no. iv.
Sig.—One every three hours until relieved.

In the treatment of coryza:

℞[1]		or	
Acetphenetidini	gr. xxxvj		2|5
Phenylis Salicyl.	3j		4|0

M. ft. cht. no. xij.
Sig.—One every two hours.

In the treatment of influenza:

℞[2]		or	
Caffeinæ Citratæ	gr. x		|65
Camphoræ	gr. x		|65
Acetphenetidini	gr. xxx		2|00

M. ft. cap. no. x.
Sig.—One every two hours.

Used in the treatment of influenza:

℞[3]		or	
Acetphenetidini,			|
Phenylis Salicyl. .....āā.	gr. xlv		3|0
Pulv. Ipecac. et Opii	gr. viij		|5

M. ft. cap. no. xv.
Sig.—One every three hours.

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[1] Musser and Kelly: Practical Treatment.
[2] Hughes: Practice of Medicine.
[3] *Ibid.*

In the treatment of migraine:

℞[1]		or	
Caffeinæ Citratæ	gr. v		32
Acetphenetidini	gr. xx	1	30
Camphoræ Monobromatæ	gr. xx	1	30

M. ft. cap. no. x.
Sig.—One every two hours until relieved.

ACIDUM ACETICUM.

Latin, Acidum Aceticum (Gen., Acidi Acetici; Abbrev., Acid. Acet.). Eng., Acetic Acid. Formula, $HC_2H_3O_2$. An aqueous solution containing not less than 36 per cent. by weight of absolute Acetic Acid.

Acidum Aceticum Dilutum.—(Gen., Acidi Acetici Diluti). Eng., Diluted Acetic Acid. An aqueous solution containing about 6 per cent. of absolute Acetic Acid.

Average Dose.—30 minims (2 mils).

Acidum Aceticum Glaciale.—Eng., Glacial Acetic Acid. A liquid containing not less than 99 per cent. of absolute Acetic Acid.

Therapeutic Action.—Antiseptic, astringent, refrigerant, irritant, caustic.

Uses.—The acetic acids are not often prescribed as such. They are used in pharmaceutical manufacturing, as reagents, and sometimes in the treatment of local conditions, as ulcers, new growths, etc. Seldom prescribed.

ACIDUM BENZOICUM.

See Benzoinum, p. 90.

ACIDUM BORICUM.

Latin, Acidum Boricum (Gen., Acidi Borici). Eng., Boric Acid. Synonym, Boracic Acid. Formula, H_3BO_3.

Form.—May be in scales or crystals, but usually a light, white, very fine powder.

Odor and Taste.—Odorless and almost tasteless.

Solubility.—In 18 parts of water, 18 parts of alcohol, and 4 parts of glycerin.

[1] Musser and Kelly: Practical Treatment.

Incompatibles.—Alkali hydroxides and carbonates.
Average Dose.—8 grains (0.5 Gm.).

Official Preparations.

Glyceritum Boroglycerini (Gen., Glyceriti Boroglycerini). Eng., Glycerite of Boroglycerin. Synonym, Solution of Boroglyceride. Boric Acid, 310 Gm.; Glycerin, to make 1000 Gm.

Unguentum Acidi Borici (Gen., Unguenti Acidi Borici). Eng., Ointment of Boric Acid. Boric Acid, 100 Gm.; Paraffin, 50 Gm.; White Petrolatum, 850 Gm.

Therapeutic Action.—Antiseptic, mild germicide, and recommended as a urinary antiseptic.

Uses.—Boric acid, by mouth or irrigation, is used in the treatment of gonorrhea, cystitis, and some other conditions of the urinary tract, particularly when it is desired to increase the acidity of the urine. It is used as a wash for eye troubles, sores, etc. In the form of the boroglyceride tampons it is employed in vaginitis, metritis, etc. In ointments or dusting powders it is used for sores, dermatitis, prickly heat, and many other superficial conditions. It enters into many mouth-washes, nasal sprays, antiseptic solutions, etc., that are employed in the treatment of nasal catarrh, rhinitis, stomatitis, pyorrhea, etc.

Administration.—Boric acid is frequently prescribed in solution. The following will illustrate:

The so-called "saturated solution" is probably best ordered as:

℞		or
Acidi Borici	ʒiss	6
Aquæ Dest.	q. s. fʒiv	120

M. ft. sol.
Sig.—Apply as directed.

In rendering the urine more acid:

℞[1]		or
Acidi Benzoici	ʒij	8
Acidi Borici	ʒiij	12
Aquæ Cinnamomi	fʒxij	360

M.
Sig.—Tablespoonful in water four times daily.

[1] Ashton: Practice of Gynecology.

In the treatment of gonorrhea:

℞[1]		or
Acidi Borici,		
Sodii Bromidi	āā. gr. clx	10
Tinct. Belladon. Fol.	f℥j	4
Liq. Potas. Citratis	q. s. f℥viij	240

M.
Sig.—Tablespoonful in water four times daily.

As a mouth-wash in pyorrhœa alveolaris:

℞[2]		or
Acidi Borici	℥j	4|00
Phenolis Liq.	♏xij	75
Glycerini	f℥j	4|00
Aquæ Menthæ Pip.	q. s. f℥vj	180|00

M.
Sig.—Use as a mouth-wash.

In the treatment of miliaria:

℞[3]		or
Phenolis,	gr. xv	1
Acidi Borici	℥ij	8
Glycerini	f℥ss	2
Alcoholis	f℥j	30
Aquæ	q. s. f℥viij	240

M.
Sig.—Apply locally.

The following illustrates its use in dusting powders:

As dusting powder in the treatment of "prickly heat":

℞		or
Acidi Salicylici	gr. xv	1
Acidi Borici	℥ij	8
Zinci Oxidi	℥iv	15
Amyli	℥ij	60

M. tere bene simul.
Sig.—Apply as directed.

This is best applied by putting the powder in a cloth bag and patting the affected parts with it several times a day, particularly after each bath.

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[1] White and Martin: Genito-urinary and Venereal Diseases.
[2] Musser and Kelly: Practical Treatment.
[3] Stelwagon: Diseases of the Skin.

As a dusting powder in the treatment of hyperidrosis:

℞[1]		or	
Acidi Salicyl. Pulv.	gr. xx	1	3
Acidi Borici Pulv.	ʒv	19	0
Zinci Oxidi	ʒiij	12	0

M.

Sig.—Apply as directed.

It is often used in ointments.

Some combinations are shown in the following:

In the treatment of ecthyma:

℞[2]		or	
Acidi Borici	gr. x		65
Bismuthi Subnit.	ʒj	4	00
Picis Liquidæ	gr. xx	1	30
Ung. Aquæ Rosæ	q. s. ʒj	30	00

M.

Sig.—Apply on a cloth twice a day.

In the treatment of erythema:

℞[3]		or	
Acetanilidi	gr. xxx	2	0
Acidi Borici	gr. xx	1	3
Adipis Lanæ Hyd.	ʒss	15	0
Ung. Aquæ Rosæ	q. s. ʒj	30	0

M.

Sig.—Apply thin several times daily.

The following is frequently employed on vaginal tampons:

℞		or	
Ichthyolis	fʒij		8
Glyc. Boroglycerini	q. s. fʒiv	120	

M.

Sig.—For office use.

ACIDUM CITRICUM.

Latin, Acidum Citricum (Gen., Acidi Citrici). Eng., Citric Acid. Formula, $H_3C_6H_5O_7 + H_2O$. An organic acid usually prepared from the juice of limes or lemons.

Form.—Colorless crystals.

Odor and Taste.—Odorless and an agreeable acid taste.

Solubility.—In 0.5 part of water and in 1.8 parts of alcohol.

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[1] Stelwagon: Diseases of the Skin.

[2] Ohmann-Dumesnil: Diseases of the Skin.

[3] *Ibid.*

Incompatibles.—Should not be prescribed in dry form or with alkaline acetates, carbonates, sulphides, tartrates, or mineral acids.

Average Dose.—8 grains (0.5 Gm.).

Official Preparations.

Syrupus Acidi Citrici (Gen., Syrupi Acidi Citrici). Eng., Syrup of Citric Acid. Synonym, Syrup of Lemon. Contains 1 per cent. each of Citric Acid and Tincture of Lemon-peel.

This was introduced to replace the old syrup of lemon. A pleasant flavor and vehicle that may be given in doses as wanted.

Citric acid is used in the preparation of many effervescing preparations, solutions, syrups, etc. The effect is usually sought by prescribing the citrates.

Therapeutic Action.—Refrigerant, antiscorbutic, mild laxative, and the citrates are systemic alkalinizers.

Uses.—Citric acid is seldom employed as such by the physician. Its uses are more fully discussed under Citrates and Limonis Succus.

OFFICIAL CITRATES.

LITHII CITRAS (Gen., Lithii Citratis). Eng., Lithium Citrate. Formula, $Li_3C_6H_5O_7 + 4H_2O$.

Form.—A white powder.

Odor and Taste.—Odorless and having a cooling, alkaline taste.

Solubility.—In about 1.4 parts of water; very slightly soluble in alcohol.

Incompatibles.—Alcohol, carbonates, lead acetate, silver nitrate.

Average Dose.—8 grains (0.5 Gm.).

POTASSII CITRAS (Gen., Potassii Citratis). Eng., Potassium Citrate. Formula, $K_3C_6H_5O_7 + H_2O$.

Form.—Transparent crystals or white powder.

Odor and Taste.—Odorless and a cooling, saline taste.

Solubility.—In about 0.6 part of water; sparingly soluble in alcohol.

Incompatibles.—Alcohol, lead acetate, potassium permanganate in acid solution, silver nitrate.

Average Dose.—15 grains (1 Gm.).

Preparations.

Potassii Citras Effervescens. Eng., Effervescent Potassium Citrate. A fine white, odorless, soluble powder, containing 20 per cent. of the salt with sodium bicarbonate and citric and tartaric acids.

Average Dose.—60 grains (4 Gm.).

Liquor Potassii Citratis. Eng., Solution of Potassium Citrate. A colorless, odorless liquid containing about 8 per cent. of potassium citrate with small amounts of citric and carbonic acids.

Average Dose.—4 fluidrachms (15 mils).

SODII CITRAS (Gen., Sodii Citratis). Eng., Sodium Citrate. Formula, $Na_3C_6H_5O_7 + 2H_2O$.

Form.—A white, granular powder.
Odor and Taste.—Odorless and having a cooling, saline taste.
Solubility.—In 1.3 parts of water, slightly soluble in alcohol.
Incompatibles.—Alcohol, lead acetate, silver nitrate.
Average Dose.—15 grains (1 Gm.).

BISMUTHI ET AMMONII CITRAS.—See Bismuth, p. 95.
FERRI ET AMMONII CITRAS.—See Ferrum, p. 159.
FERRI ET QUININÆ CITRAS.—See Ferrum, p. 159.
FERRI ET QUININÆ CITRAS SOLUBILIS.—See Ferrum, p. 159.
FERRI ET STRYCHNINÆ CITRAS.—See Ferrum, p. 159.

Therapeutic Action.—Said to be mildly diuretic, diaphoretic, expectorant, refrigerant, alkalinizer.

Uses.—The real value of the citrates in medicine seems to be very poorly established, some using them extensively and claiming much, and others placing no reliance in them at all. They are prescribed as such or as the "solution of potassium citrate" in the treatment of gonorrhea, cystitis, etc., particularly when it is desired to render the urine less acid. They are also still used in the treatment of renal or cystic calculi, gout, and rheumatism. They are largely used in cough and fever mixtures, particularly for colds, influenza, bronchitis, and pneumonia. They have been recommended to lessen coagulability in the early stages of pneumonia, and late in typhoid fever. Recommended for pellagra. Sodium citrate is quite extensively employed in infant feeding to prevent the formation of hard curds by milk.

Administration.—The citrates of lithium, potassium, and sodium are the salts used for the citric acid radical. They are somewhat deliquescent, so are not prescribed in powders. The doses are rather large for capsules. Their solubility and freedom from odor or unpleasant taste render them well suited to administration in aqueous solution, which is the usual method of employment. The lithium citrate is on the market in 3- and 5- grain tablets, put up 40 to the bottle. They are frequently prescribed and should always be ordered in this number, so that the original bottle may be dispensed. Lithium citrate tablets are often prescribed for rheumatism, genito-urinary disturbances, etc.

Some prescriptions showing the usual employment of citrates are shown in the following:

℞
Tab. Lithii Cit. (gr. v) ..... no. xl.
Sig.—One in a glass of water every four hours.

For cough, bronchitis, etc. (child 4 years old):

℞		or
Potassii Citratis	gr. lxxx	5
Spir. Ætheris Nit.	f℥ij	8
Syr. Ipecacuanhæ	f℥ss	2
Syr. Acidi Citrici	f℥iv	15
Aquæ q. s.	f℥ij	60

M.
Sig.—Teaspoonful every two hours.

In the treatment of cough:

℞[1]		or
Codeinæ Sulphatis	gr. iss	1
Potassii Citratis	℥ij	80
Syr. Tolutani	f℥j	300
Aquæ q. s.	f℥iij	900

M.
Sig.—Teaspoonful every two hours.

In the treatment of the cough of measles:

℞[2]		or
Potassii Citratis	℥ss	15
Limonis Succi	f℥j	30
Tinct. Opii Camph.	f℥ij	8
Syr. Ipecacuanhæ	f℥ij	8
Syr. Tolutani q. s.	f℥ij	60

M.
Sig.—Teaspoonful in water every two hours.

Something like the following has been suggested in the effort to abort pneumonia:

℞		or
Sodii Citratis	℥j	30
Aquæ Menth. Pip. q. s.	f℥iij	90

M.
Sig.—Teaspoonful in water every two hours.

In the treatment of gonorrhea:

℞[3]		or
Acidi Borici,		
Sodii Bromidi āā.	℥iij	12
Tinct. Belladon. Fol.	f℥j	4
Liq. Potas. Citratis q. s.	f℥viij	240

M.
Sig.—Tablespoonful in water four times daily.

[1] Musser and Kelly: Practical Treatment.
[2] Anders: Practice of Medicine.
[3] White and Martin: Genito-urinary and Venereal Diseases.

Used as an antipyretic in the acute diseases of childhood, as measles, scarlatina, bronchitis, etc.:

℞[1]		or
Tinct. Aconiti	♏xvj	1
Spir. Ætheris Nit.	f℥iij	12
Liq. Potassii Cit.	f℥ij	60

M.
Sig.—Teaspoonful in water every two hours.

ACIDUM GALLICUM.

Latin, Acidum Gallicum (Gen., Acidi Gallici). Eng., Gallic Acid. An organic acid usually prepared from tannic acid.

Form.—White or pale fawn-colored needles or prisms.

Odor and Taste.—Odorless; an astringent and slightly acidulous taste.

Solubility.—In about 87 parts of water or 4.6 parts of alcohol.

Average Dose.—15 grains (1 Gm.).

Therapeutic Action.—Astringent, styptic; also classed as a hemostatic.

Uses.—Gallic acid is now seldom employed in treatment. Bismuth subgallate is discussed elsewhere.

ACIDUM HYDRIODICUM DILUTUM.

See Iodum, p. 199.

ACIDUM HYDROBROMICUM DILUTUM.

See Bromum, p. 100.

ACIDUM HYDROCHLORICUM.

Latin, Acidum Hydrochloricum (Gen., Acidi Hydrochlorici). Eng., Hydrochloric Acid. Synonym, Muriatic Acid.

Form.—An aqueous solution, containing not less than 31 per cent. nor more than 33 per cent. of HCl.

Odor and Taste.—Pungent odor which disappears on diluting. Intensely acid taste.

Solubility.—Miscible in all proportions with water or alcohol.

Incompatibles.—Alkaline carbonates, chlorates, permanganates,

[1] Hughes: Practice of Medicine.

silver salts, lead salts, tartar emetic, alcohol, ether, carbohydrates, sulphur, etc.

Official Preparation.

Acidum Hydrochloricum Dilutum (Gen., Acidi Hydrochlorici Diluti). Eng., Diluted Hydrochloric Acid. Synonym, Diluted Muriatic Acid. An aqueous solution containing not less than 9.5 per cent. nor more than 10.5 per cent. of HCl.

Average Dose.—15 minims (1 mil).

Hydrochloric Acid is also contained in some other preparations, as Liquor Acidi Arsenosi and Tinctura Ferri Chloridi.

Therapeutic Action.—Aids digestion.

Uses.—The diluted acid is extensively used, either alone or in combination, in the treatment of indigestion, where there is a deficiency of normal gastric secretion. Sometimes used in tonic and stomachic preparations.

Administration.—The Diluted Hydrochloric Acid is the preparation usually employed. It should be ordered to be taken well diluted and through a tube. The official dose is very often exceeded.

When it is desired to give hydrochloric acid alone, it may be ordered as:

℞	or
Acidi Hydrochlor. Dil. ..... f℥ij	60

Sig.—Fifteen (15) drops in water after meals.

Or:

℞	or
Acidi Hydrochlor. Dil. ..... f℥j	30
Aquæ .....q. s. f℥iv	120

M.

Sig.—Teaspoonful in water after meals.

In combination with other digestive agents it may be ordered as:

℞	or
Acidi Hydrochlor. Dil. ..... f℥j	30
Liq. Pepsini Arom. (N. F.) .....q. s. f℥viij	240

M.

Sig.—Two (2) teaspoonfuls in water after meals.

Other pepsin preparations may be used instead of the Liq. Pepsini Arom. in the above.

In combination as a digestant:

℞		or
Pepsini	3ij	8
Acidi Hydrochlor. Dil.,		
Tinct. Nucis Vomicæ,		
Glycerini āā.	f3j	30
Aquæ q. s.	f3vj	180

M.

Sig.—Teaspoonful in water after meals.

Or:

℞[1]		or
Strychninæ Sulph.	gr. ss	03
Pepsini	3j	4 00
Acidi Hydrochlor. Dil.	f3ss	15 00
Glycerini	f3ss	15 00
Aquæ Chloroformi q. s.	f3iij	90 00

M.

Sig.—Teaspoonful in water after meals.

In a tonic formula:

℞		or
Hydrarg. Chlor. Corros.	gr. j	065
Liq. Acidi Arsenosi	f3j	4 000
Tinct. Ferri Chlor.,		
Acidi Hydrochlor. Dil.,		
Syrupi āā.	f3iv	8 000
Aquæ q. s.	f3vj	180 000

M.

Sig.—Two (2) teaspoonfuls in water after meals.

This constitutes the well-known "Elixir Four Chlorides."

ACIDUM HYDROCYANICUM DILUTUM.

Latin, Acidum Hydrocyanicum Dilutum (Gen., Acidi Hydrocyanici Diluti). Eng., Diluted Hydrocyanic Acid. Synonym, Diluted Prussic Acid. A colorless liquid composed of about 2 per cent. of absolute Hydrocyanic Acid and about 98 per cent. of water.

Average Dose.—1½ minims (0.1 mil).

Therapeutic Action.—Sedative and local anesthetic.

Uses.—Hydrocyanic acid as such is seldom used in medicine. Internally it is sometimes used to allay cough or nausea. Externally it is used to allay itching. Seldom prescribed as such, except by dermatologists.

[1] Hughes: Practice of Medicine.

ACIDUM HYPOPHOSPHOROSUM.

Latin, Acidum Hypophosphorosum (Gen., Acidi Hypophosphorosi). Eng., Hypophosphorous Acid. Formula, HPH_2O_2. A colorless liquid composed of about 30 per cent. by weight of absolute Hypophosphorous Acid and 70 per cent. of water.

Official Preparation.

Acidum Hypophosphorosum Dilutum (Gen., Acidi Hypophosphorosi Diluti). Eng., Diluted Hypophosphorous Acid. An aqueous solution containing about 10 per cent. of absolute Hypophosphorous Acid.

Average Dose.—8 minims (0.5 mil).

Diluted Hypophosphorous Acid is used in the syrup of ferrous iodide.

Official Hypophosphites and Preparations.

Incompatibles.—Arsenic salts, bromine, bromates, chlorine and chlorates, chromates, copper salts, ferric salts, iodine and iodates, nitric acid, permanganates, sulphuric and sulphurous acids.

CALCII HYPOPHOSPHIS (Gen., Calcii Hypophosphitis). Eng., Calcium Hypophosphite. Formula, $Ca(PH_2O_2)_2$.

Form.—Colorless prisms, scales or white crystalline powder.

Odor and Taste.—Odorless, a nauseous, bitter taste.

Solubility.—In 6.5 parts of water; insoluble in alcohol.

Average Dose.—8 grains (0.5 Gm.).

POTASSII HYPOPHOSPHIS (Gen., Potassii Hypophosphitis). Eng., Potassium Hypophosphite. Formula, KPH_2O_2.

Form.—White plates, masses or granular powder.

Odor and Taste.—Odorless; a pungent saline taste.

Solubility.—In 0.6 part of water or 9 parts of alcohol; deliquescent.

Average Dose.—8 grains (0.5 Gm.).

SODII HYPOPHOSPHIS (Gen., Sodii Hypophosphitis). Eng., Sodium Hypophosphite. Formula, $NaPH_2O_2$.

Form.—Colorless plates or white granular powder.

Odor and Taste.—Odorless; a bitterish-sweet, saline taste.

Solubility.—In about 1 part of water; soluble in alcohol; deliquescent.

Average Dose.—15 grains (1 Gm.).

Official Preparations.

Syrupus Hypophosphitum. Eng., Syrup of Hypophosphites. Calcium Hypophosphite, 45 Gm.; Potassium Hypophosphite, 15 Gm.; Sodium Hypophosphite, 15 Gm.; Diluted Hypophosphorous Acid, 2 mils; Glycerin, 50 mils; Sugar, 600 Gm.; Water, to make 1000 mils.

Average Dose.—2½ fluidrachms (10 mils).

Syrupus Hypophosphitum Compositus. Eng., Compound Syrup of Hypophosphites. Calcium Hypophosphite, 35 Gm.; Potassium Hypophosphite, 17.50 Gm.; Sodium Hypophosphite, 17.50 Gm.; Ferric Hypophosphite, 2.25 Gm.; Manganese Hypophosphite, 2.25 Gm.; Quinine, 1.10 Gm.; Strychnine, 0.115 Gm.; Sodium Citrate, 3.75 Gm.; Diluted Hypophosphorous Acid, 15 mils; Sugar, 775 Gm.; Water, to make 1000 mils.

Average Dose.—2 fluidrachms (8 mils).

Official Glycerophosphates and Preparation.

Calcii Glycerophosphas (Gen., Calcii Glycerophosphatis). Eng., Calcium Glycerophosphate.

Form.—A white powder.

Odor and Taste.—Odorless and almost tasteless.

Solubility.—Soluble in 50 parts of water, somewhat hygroscopic. Insoluble in alcohol.

Average Dose.—4 grains (0.25 Gm.).

Sodii Glycerophosphas (Gen., Sodii Glycerophosphatis). Eng., Sodium Glycerophosphate.

Form.—A white powder, plates or scales.

Odor and Taste.—Odorless, a saline taste.

Solubility.—Very soluble in water—nearly insoluble in alcohol.

Average Dose.—4 grains (0.25 Gm.).

Liquor Sodii Glycerophosphatis. Eng., Solution of Sodium Glycerophosphate. An aqueous solution containing about 50 per cent. of the salt.

Average Dose.—6 minims (0.35 mil).

Therapeutic Action.—Tonic.

Uses.—The value of these preparations is seriously questioned, but they have been, and still are, extensively used for general debility, neurasthenia, hysteria, phthisis, convalescence from exhausting fevers, etc. It is possible that the good results claimed are due to the fact that the compound syrup or solution is usually employed and these contain iron, strychnine and quinine in addition to the metallic hypophosphites or glycerophosphates.

Administration.—The Hypophosphites are most frequently prescribed in the form of the Compound Syrup of Hypophosphites, which is either ordered alone or with other agents as additional Strychnine or the Tincture of Nux Vomica. The Emulsion of Cod-liver Oil with Hypophosphites is also a favorite form for administration. Many claim that there is no advantage from a combination as found in the syrups, and prefer to prescribe one or two alone. Calcium Hypophosphite seems to be the salt of choice under these circumstances.

These glycerophosphates are prescribed alone or combined with other agents. By far the most common use is as the unofficial compound solution or compound syrup. These contain the glycerophosphates of calcium, sodium, potassium, iron, manganese, quinine, and strychnine.

The hypophosphites may be ordered as:

℞ or

Syr. Hypophos. ..... f℥viij 240|

Sig.—Two (2) teaspoonfuls in water after meals.

Or:

℞ or

Syr. Hypophos. Co. ..... f℥viij 240|

Sig.—Teaspoonful in water after meals.

Or:

℞ or

Tinct. Nucis Vomicæ ..... f℥j 30|

Syr. Hypophos. Co. .....q. s. f℥viij 240|

M.

Sig.—Teaspoonful in water before meals.

The following unofficial preparation is often used, particularly in phthisis, chronic bronchitis, etc.:

℞ or

Emul. Ol. Morrh. cum Hypophos. ..... Oj 480|

Sig.—Tablespoonful after meals. (Shake-label.)

ACIDUM LACTICUM.

Latin, Acidum Lacticum (Gen., Acidi Lactici). Eng., Lactic Acid. Formula, $HC_3H_5O_3$. A colorless liquid containing about 85 per cent. of absolute Lactic Acid.

Average Dose.—30 minims (2 mils).

Therapeutic Action.—Astringent, irritant, caustic, antiseptic.

Uses.—Sometimes used for the local lesions of diphtheria, scarlatina, tubercular laryngitis, etc. Seldom prescribed.

ACIDUM NITRICUM.

Latin, Acidum Nitricum (Gen., Acidi Nitrici). Eng., Nitric Acid. Synonym, Aqua Fortis. Formula, HNO_3. An aqueous solution containing about 68 per cent. of absolute Nitric Acid.

Therapeutic Action.—Caustic.

Uses.—Nitric acid is used as a caustic to remove warts and other small growths, and to cauterize ulcers, particularly chancre and chancroid.

ACIDUM NITROHYDROCHLORICUM.

Latin, Acidum Nitrohydrochloricum (Gen., Acidi Nitrohydrochlorici). Eng., Nitrohydrochloric Acid. Synonyms, Nitromuriatic Acid, Aqua Regia.

Nitric acid, 18 mils; hydrochloric acid, 82 mils.

Average Dose.—3 minims (0.2 mil).

Official Preparation.

Acidum Nitrohydrochloricum Dilutum (Gen., Acidi Nitrohydrochlorici Diluti). Eng., Diluted Nitrohydrochloric Acid. Nitric Acid, 10 mils; Hydrochloric Acid, 45.5 mils; Distilled Water, 194.5 mils.

Average Dose.—15 minims (1 mil).

Therapeutic Action.—Astringent, caustic, cholagogue.

Uses.—Employed in gastric and intestinal indigestion, chronic diarrhea, hepatitis, hepatic cirrhosis, furunculosis, etc.

Administration.—These, if prescribed, are usually ordered alone. They should be well diluted when taken.

Used for furunculosis:

℞ or

Acidi Nitrohydroch. Dil. ..... f℥iij 90|

Sig.—Fifteen (15) drops in water after meals.

Care should be exercised to protect the teeth.

ACIDUM OLEICUM.

Latin, Acidum Oleicum (Gen., Acidi Oleici). Eng., Oleic Acid. Formula, $HC_{18}H_{33}O_2$. A yellowish or brownish-yellow oily liquid.

ACIDUM PHENYLCINCHONINICUM.

Latin, Acidum Phenylcinchoninicum (Gen., Acidi Phenylcinchoninici). Eng., Phenylcinchonic Acid.

An organic acid.

Average Dose.—8 grains (0.5 Gm.).

ACIDUM PHOSPHORICUM.

Latin, Acidum Phosphoricum (Gen., Acidi Phosphorici), Eng., Phosphoric Acid. Synonyms, Syrupy Phosphoric Acid; Orthophosphoric Acid. Formula, H_3PO_4.

Form.—A liquid containing about 85 per cent. of absolute Orthophosphoric Acid.

Odor and Taste.—Odorless and strongly acid taste.

Solubility.—Miscible with water or alcohol in all proportions.

Incompatibles.—Practically all metallic salts except those of the alkali metals.

Official Preparation.

Acidum Phosphoricum Dilutum (Gen., Acidi Phosphorici Diluti). Eng., Diluted Phosphoric Acid. An aqueous liquid containing about 10 per cent. of absolute Orthophosphoric Acid.

Average Dose.—30 minims (2 mils).

Therapeutic Action.—Has been classed as a tonic and alterative.

Uses.—Sometimes employed in tonic preparations, particularly for conditions characterized by loss of appetite, indigestion, etc.

Administration.—The following will serve to illustrate the way to prescribe the drug:

℞		or
Acidi Phosph. Dil.,		
Tinct. Ferri Chlor.,		
Tinct. Nucis Vom.	āā. f℥j	30
Syr. Pruni Virg.	q. s. f℥vj	180

M.

Sig.—Teaspoonful in water after meals.

ACIDUM SALICYLICUM.

Latin, Acidum Salicylicum (Gen., Acidi Salicylici). Eng., Salicylic Acid. Formula, $HC_7H_5O_3$.

Form.—Fine, white needles or crystalline powder.

Odor and Taste.—Almost odorless and having a sweetish, afterward acrid taste.

Incompatibles.—Spirit of nitrous ether, lead and iron salts, iodides, etc.

Average Dose.—12 grains (0.75 Gm.).

Therapeutic Action.—Antiseptic, germicide, antirheumatic, antipyretic.

Uses.—Sometimes employed internally in the treatment of rheumatism. Locally—used for the removal of corns, etc.; also to remove the superficial layers of the skin and in the treatment of various skin diseases, as eczema, dermatitis, pruritus, and prickly heat. It is a common constituent of powders for dressing the cord stump of the newborn.

Administration.—*Internally.*—Salicylic Acid is now not often prescribed in this way, but effect is obtained by use of salicylates. When the acid is given as such it is usually ordered in capsules of 5 grains each. It is often prescribed with sodium bicarbonate to make fresh sodium salicylate. (See p. 37.)

Externally.—Salicylic Acid is used in solution, powder and ointment:

In the treatment of corns:

℞		or
Acidi Salicylici	gr. xx	1 | 3
Ext. Cannabis	gr. xx	1 | 3
Olei Ricini	f3ss	2 | 0
Collodii Flex.	q. s. f3iv	15 | 0

M.
Sig.—Apply as directed.

In the treatment of diabetic vulvitis:

℞[1]		or
Acidi Salicylici	gr. x	| 65
Petrolati	q. s. ʒj	30 | 00

M. tere bene.
Sig.—Use locally.

As a dressing for the stump of the cord in obstetrical work:

℞		or
Acidi Salicylici	gr. xv	1 |
Amyli	q. s. ʒiv	15 |

M. et tere bene.
Sig.—For dressing umbilicus.

This is usually applied freely when cord is first dressed and is not removed until the stump of the cord separates.

[1] Ashton: Practice of Gynecology.

In the treatment of psoriasis:

℞[1]		or	
Chrysarobini	ʒj	4	0
Acidi Salicylici	gr. xx	1	3
Ætheris	fʒj	4	0
Olei Ricini	♏x		6
Collodii	q. s. fʒss	15	0

M.
Sig.—Paint on affected parts.

As a dusting powder, as in the treatment of prickly heat:

℞	
Acidi Salicylici	gr. xv
Acidi Borici	ʒj
Zinci Oxidi	ʒij
Amyli	q. s. ℥ij

M.
Sig.—Apply as directed.

This is best applied by putting in a cloth bag and patting the affected parts with it, particularly after bathing.

As a dusting powder in the treatment of hyperidrosis:

℞[2]		or	
Acidi Salicyl. Pulv.	gr. xx	1	3
Acidi Borici Pulv.	ʒv	19	0
Zinci Oxidi	℥iij	12	0

M.
Sig.—Apply as directed.

In an ointment, as in the treatment of dermatitis from drugs, poison ivy, etc.:

℞		or	
Acidi Salicylici	gr. x		6
Ung. Zinci Oxidi	ʒij	8	0
Amyli	ʒj	4	0
Adipis Lanæ Hyd.	ʒij	8	0
Petrolati	q. s. ℥j	30	0

M.
Sig.—Apply freely as directed.

[1] Stelwagon: Diseases of the Skin.
[2] *Ibid.*

OFFICIAL SALICYLATES.

Incompatibles of Salicylates.—Hydrobromic acid, mineral acids, ferric salts, lead acetate, lime-water, quinine salts (in solution), spirit of nitrous ether, silver nitrate (in solution), sodium phosphate (in powder).

AMMONII SALICYLAS (Gen., Ammonii Salicylatis). Eng., Ammonium Salicylate. Formula, $NH_4C_7H_5O_3$.

Form—Colorless prisms; plates or powder.

Odor and Taste.—Odorless and having a slight saline, bitter taste, with a sweetish after-taste.

Solubility.—In 1 part of water or 3 parts of alcohol.

Average Dose.—8 grains (0.5 Gm.).

SODII SALICYLAS (Gen., Sodii Salicylatis). Eng., Sodium Salicylate. Formula, $NaC_7H_5O_3$.

Form.—A white powder or having not more than a faint pink tinge.

Odor and Taste.—Odorless and having a sweetish saline taste.

Solubility.—In 0.9 part of water or 9.2 parts of alcohol.

Average Dose.—15 grains (1 Gm.).

STRONTII SALICYLAS (Gen., Strontii Salicylatis). Eng., Strontium Salicylate. Formula, $Sr(C_7H_5O_3)_2 + 2\ H_2O$.

Form.—A white powder.

Odor and Taste.—Odorless and having a sweetish saline taste.

Solubility.—In 19 parts of water or 61 parts of alcohol.

Average Dose.—15 grains (1 Gm.).

Therapeutic Action.—Antipyretic, antirheumatic and antiseptic.

Uses.—Extensively used in the treatment of rheumatism, gout, tonsillitis, and kindred conditions, as endocarditis and chorea, and for neuralgia. Recommended for iritis and various other eye conditions. Sometimes used for goiter.

Administration.—It will be noted that these salts are practically white, odorless powders with a sweetish taste and, with the exception of Strontium, they are freely soluble in water. They are usually prescribed in solution, but sometimes in capsules, either alone or with other agents. The sweetish taste is rather nauseating to some patients. Not more than 5 or 6 grains of a salicylate can be ordered to a capsule, which practically eliminates this form of administration. Sodium Salicylate is by for the most commonly used of these salts.

When an alkaline salicylate is introduced into the stomach containing free hydrochloric acid, salicylic acid is precipitated; so it certainly seems desirable to prevent this by the use of such agents as sodium bicarbonate or magnesia magma (milk of magnesia). The

latter is particularly useful where intestinal elimination is desirable. The sodium bicarbonate may be included in the prescription or the patient may be instructed to add one or the other at the time of taking the dose.

In some conditions the best results seem to be obtained by using large doses, as 100 grains per day, and concentrating this into a short period, much as quinine is used in malaria. Such dosage may cause discomfort if given in the early part of the day, and may incapacitate a patient who might otherwise continue active. Probably the best plan is to give, say, 20 grains at 2, 4, 6 and 8 P.M. and at 10 P.M., if too much dizziness, nausea, etc., has not been induced; the patient then can sleep through what might be the uncomfortable period.

When a salicylate is ordered, the salt made with the synthetic salicylic acid is supplied, unless definitely specified to the contrary. The salt made from the "true" acid is many times as expensive, and, it is claimed, on the best authority, that the action in every particular is the same as the synthetic product. Many experienced clinicians still claim that the "true" salt is better tolerated, and continue to employ it.

For administering the drug alone the following method is a desirable one:

℞		or	
Sodii Salicylatis	.....	ʒv	20
Aquæ Menthæ Pip.	.....q. s.	fʒij	60

M.

Sig.—Teaspoonful in water at 2, 4, 6, 8, and 10 P.M.

Patient may be instructed to take milk of magnesia with each dose.

Used in the treatment of rheumatism:

℞[1]		or	
Sodii Salicylatis	.....	ʒss	15
Sodii Bicarbonatis	.....	ʒij	8
Aquæ Menthæ Pip.	.....q. s.	fʒiv	120

M.

Sig.—Two (2) teaspoonfuls well diluted as directed.

℞		or	
Acidi Salicylici	.....	gr. clx	10
Sodii Bicarbonatis	.....	gr. cxx	8
Aquæ Menthæ Pip.	.....q. s.	fʒiv	120

M.

Sig.—Tablespoonful in water as directed.

[1] **Musser and Kelly: Practical Treatment.**

This gives a slightly alkaline solution containing about 20 grains of sodium salicylate to the tablespoonful. It should not be dispensed till after standing about one hour. More sodium bicarbonate can be used if desired.

The "natural" or "true" salt from the oil of wintergreen may be prescribed as follows:

℞		or
Sodii Salicylatis (O.W.)	ʒv	20
Aquæ Menthæ Pip.	q. s. fʒij	60

M.
Sig.—Teaspoonful in water as directed.

Sodium bicarbonate or milk of magnesia may be ordered added to each dose.

Or:

℞		or
Acidi Salicylici (O.W.)	gr. clx	10
Sodii Bicarbonatis	gr. cxx	8
Tinct. Colchici Sem.	fʒij	8
Aquæ Menthæ Pip.	q. s. fʒiv	120

M.
Sig.—Tablespoonful in water at 2, 4, 6, 8, and 10 P.M.

In the treatment of rheumatism, tonsillitis, endocarditis, etc.:

℞		or
Sodii Salicylatis,		
Sodii Bicarbonatis	āā. gr. clx	10
Spir. Chloroformi	fʒij	8
Aquæ Menth. Pip.	q. s. fʒiv	120

M.
Sig.—Tablespoonful in water every three hours until effect.

The patient is instructed to discontinue for that day when ringing in the ears, dizziness, etc., develop.

In the treatment of rheumatism, gout, etc.:

℞		or
Sodii Salicylatis	ʒiv	15
Sodii Bicarbonatis	ʒij	8
Vin. Colchici Sem.	fʒiv	15
Aquæ Chloroformi	q. s. fʒij	60

M.
Sig.—Teaspoonful in water as directed.

BISMUTHI SUBSALICYLAS.—See Bismuth, p. 95.
HYDRARGYRI SALICYLAS.—See Hydrargyrum, p. 181.
PHYSOSTIGMINÆ SALICYLAS.—See Physostigma, p. 261.
QUININÆ SALICYLAS.—See Cinchona, p. 130.

PHENYLIS SALICYLAS (Gen., Phenylis Salicylatis). Eng., Phenyl Salicylate. Synonym, Salol. Formula, $C_{13}H_{10}O_3$.

Form.—A white crystalline powder.

Odor and Taste.—A faint aromatic odor and a slight but characteristic taste.

Solubility.—In 6670 parts of water or 6 parts of alcohol. Very soluble in ether, chloroform or oils.

Incompatibles.—Liquefies when triturated with camphor, phenol, hydrated chloral, thymol. Also general incompatibles of other salicylates.

Average Dose.—5 grains (0.3 Gm.).

Therapeutic Action.—Antirheumatic, intestinal antiseptic, anthelmintic, analgesic, antipyretic.

Uses.—Extensively employed as an intestinal antiseptic in the treatment of diarrhea, dysentery, typhoid fever, etc., and intestinal parasites. Recommended in the treatment of gonorrhea, cystitis, and other genito-urinary conditions. Sometimes employed where salicylates are indicated, as for rheumatism, tonsillitis, etc.

Administration.—Phenyl Salicylate is often prescribed alone in capsules, but this is rather undesirable, as it is so nearly insoluble that concretions of the drug might result after the gelatin of the capsule has been dissolved. A thoroughly agreeable way of administering is in powders, as the drug is so nearly odorless and tasteless. As it is readily soluble in oils it may be dissolved in olive oil and taken that way or the oil made into an emulsion. The drug must be given with some caution on account of the Phenol content.

When given alone Phenyl Salicylate is best given in powders, as:

℞		or	
Phenylis Salicylatis	ʒij		8|
Ft. cht. no. xij.			
Sig.—One every four hours.			

Or it may be ordered in suspension, as:

℞		or	
Phenyl. Salicyl.	ʒij		8|
Muc. Acaciæ	fʒiv		15
Syr. Tolutani	q. s. fʒij		60|
M.			
Sig.—Teaspoonful every four hours. (Shake-label.)			

Used in the treatment of influenza:

℞[1]		or
Phenylis Salicylatis,		
Acetphenetidini	āā. gr. xlv	3|0
Pulv. Ipecac. et Opii	gr. viij	|5

M. ft. cap. no. xv.
Sig.—One every three hours.

In the treatment of the diarrhea of typhoid fever:

℞[2]		or
Phenylis Salicyl.	3ss	2|
Bismuthi Subsalicyl.	3j	4|

M. ft. cht. no. x.
Sig.—One after each stool.

Used for the relief of abdominal tympany:

℞[3]		or
Phenylis Salicyl.	gr. xx	1|3
Bismuthi Subnit.	gr. L.	3|0

M. ft. cap. no. x.
Sig.—One two hours after each meal.

In the treatment of coryza:

℞[4]		or
Phenylis Salicylatis	3j	4|
Acetphenetidini	gr. xxxvj	2|

M. ft. cht. no. xij.
Sig.—One every two hours.

Phenyl Salicylate is frequently ordered as the coating for enteric pills, as in the treatment of amebic dysentery when both the ipecac and the salt are desired:

℞		or
Ipecacuanhæ Pulv.	gr. ccl	16|
Phenylis Salicylatis	q. s.	|

M. ft. pil. ent. no. L.
Sig.—Take as directed.

Detailed written instructions should be left with the patient. About 3 to 4 grains of the salt is usually employed for each pill.

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[1] Musser and Kelly: Practical Treatment.
[2] Hughes: Practice of Medicine.
[3] Ashton: Practice of Gynecology.
[4] Musser and Kelly: Practical Treatment.

When 10 or more pills are given at one time it necessitates a fairly large dose of the drug, but no ill effects seem to have been noted.

METHYLIS SALICYLAS (Gen., Methylis Salicylatis). Eng., Methyl Salicylate. Synonyms, Oleum Gaultheriæ, Oil of Gaultheria, Oil of Wintergreen, Oleum Betulæ, Oil of Sweet Birch, Oil of Teaberry. It is produced synthetically or is obtained by distillation from *Gaultheria procumbens* or from *Betula lenta*. The label must indicate whether the methyl salicylate has been made synthetically or distilled from either of the above-mentiond plants.

Form.—A colorless, yellowish or reddish liquid.

Odor and Taste.—The characteristic odor and taste of Gaultheria.

Solubility.—Sparingly soluble in water, freely miscible with alcohol.

Average Dose.—12 minims (0.75 mil).

Therapeutic Action.—Antipyretic, antirheumatic, antiseptic.

Uses.—Sometimes used internally in place of salicylic acid or the mineral salts, but has many disadvantages, as taste, odor, liquid form, etc., and possesses no marked advantages.

Externally.—Sometimes used in local applications in conjunction with the internal administration of other salicylates.

ACIDUM ACETYLSALICYLICUM (Gen., Acidi Acetylsalicylici). Eng., Acetylsalicylic Acid. Aspirin (not official).

Form.—A white crystalline powder.

Odor and Taste.—Odorless and having a faintly acid taste.

Solubility.—Slightly soluble in water, soluble in alcohol.

Average Dose.—7½ grains (0.500 Gm.).

Therapeutic Action.—Anodyne, hypnotic, antipyretic, diaphoretic, antirheumatic.

Uses.—Extensively used for the relief of headaches and some other classes of pain; also for rheumatism, gout, tonsillitis, colds, influenza, etc. Recommended for exophthalmic goiter. Probably disturbs the digestive apparatus less but depresses more than the other salicylates.

Administration.—Its comparative insolubility and its freedom from unpleasant odor or taste render its administration more convenient in powders or capsules. The capsules are usually preferred.

Prescribed alone for headache:

℞		or	
Acidi Acetylsalicyl.	ʒss		2|

Ft. cap. no. vj.

Sig.—One (1) every three hours till relieved.

For influenza, colds, etc.:

℞		or
Camphoræ Monobrom.,		
Quininæ Hydrobrom. .....āā	gr. xv	1|0
Acidi Acetylsalicyl.	gr. xl	2|5

M. ft. cap. no. xij.
Sig.—Four (4) tonight, then one every four hours.

The first night a capsule may be ordered every hour till four are taken.

For rheumatic pain:

℞		or
Acidi Acetylsalicyl.	gr. L	3|
Phenylis Salicylatis	gr. lxxv	5|

M. ft. cht. no. x.
Sig.—One (1) every four hours.

ACIDUM STEARICUM.

Latin, Acidum Stearicum (Gen., Acidi Stearici). Eng., Stearic Acid. A hard, white, somewhat glossy solid.

ACIDUM SULPHURICUM.

Latin, Acidum Sulphuricum (Gen., Acidi Sulphurici). Eng., Sulphuric Acid. Synonym, Oil of Vitriol. Formula, H_2SO_4.

Form.—A heavy, colorless liquid containing not less than 93 nor more than 95 per cent. of absolute Sulphuric Acid.

Odor and Taste.—Odorless, strongly acid taste.

Solubility.—Miscible in all proportions with water and alcohol—with evolution of much heat.

Incompatibles.—Alkaline carbonates and hydroxides; salts of barium, calcium, lead and silver; vegetable astringents, etc.

Official Preparations.

Acidum Sulphuricum Aromaticum (Gen., Acidi Sulphurici Aromatici). Eng., Aromatic Sulphuric Acid. Synonym, Elixir of Vitriol. Sulphuric Acid, 109 mils; Tincture of Ginger, 50 mils; Oil of Cinnamon, 1 mil; Alcohol, to 1000 mils. Contains about 20 per cent. by weight of absolute sulphuric acid.

Average Dose.—15 minims (1 mil).

Acidum Sulphuricum Dilutum (Gen., Acidi Sulphurici Diluti). Eng., Diluted Sulphuric Acid. Contains about 10 per cent. of absolute sulphuric acid and 90 per cent. of water.

Average Dose.—30 minims (2 mils).

Therapeutic Action.—Escharotic, astringent.

Uses.—The principal employment is in diarrhea preparations, and in quinine solutions for the treatment of malaria or for general tonic purposes.

Administration.—Sulphuric Acid is usually employed in the form of the diluted or the aromatic acid. They should always be well diluted when taken.

Some methods of prescribing are shown in the following:

As a part of the treatment of comedo:

℞[1]		or
Magnesii Sulphatis	℥iss	45
Ferri Sulphatis	gr. xvj	1
Acidi Sulph. Dil.	f℥ij	8
Aquæ q. s.	f℥viij	240

M.

Sig.—Tablespoonful in water before breakfast.

In the treatment of diarrhea:

℞		or
Magnesii Sulphatis	℥iv	15|0
Tinct. Opii Deod.	♏xl	2|5
Acidi Sulph. Arom.	f℥iss	6|0
Aquæ Menthæ Pip. q. s.	f℥iv	120|0

M.

Sig.—Tablespoonful every four hours till relieved.

To effect the solution of quinine, as in a preparation for malaria:

℞		or
Quininæ Sulph.	℥iss	6
Acidi Sulph. Arom.	f℥ij	8
Liq. Acidi Arsenosi	f℥ij	8
Aquæ q. s.	f℥iv	120

M.

Sig.—Teaspoonful in water after meals.

ACIDUM SULPHUROSUM.

(U. S. P., viii—Not Official.)

Latin, Acidum Sulphurosum (Gen., Acidi Sulphurosi). Eng., Sulphurous Acid. Formula, H_2SO_3.

Form.—A colorless liquid containing not less than 6 per cent. by weight of Sulphur Dioxide and about 94 per cent. of water.

Odor and Taste.—A pungent, disagreeable odor and acid taste.

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[1] Ohmann-Dumesnil: Diseases of the Skin.

Solubility.—Miscible in all proportions with water or alcohol.

Incompatibles.—Those of sulphuric acid may apply.

Average Dose.—30 minims (2 mils).

Therapeutic Action.—Antiseptic, germicide, disinfectant.

Uses.—Principally used in the treatment of such conditions as tonsillitis, pharyngitis, diphtheria, stomatitis, etc. Has been recommended for flatulence, vomiting, etc.

Administration.—It should be well diluted when taken. Probably the most frequent employment is shown in the treatment of throat disease.

The following will illustrate:

℞		or
Potassii Chloratis	ʒj	4
Tinct. Ferri Chloridi	fʒij	8
Acidi Sulphurosi	fʒiij	12
Glycerini	fʒiv	15
Aquæ	q. s. fʒiv	120

M.

Sig.—Tablespoonful in water every two hours.

ACIDUM TANNICUM.

Latin, Acidum Tannicum (Gen., Acidi Tannici). Eng., Tannic Acid. Synonyms, Tannin, Gallotannic Acid. Formula, $HC_{14}H_9O_9$. A tannin usually obtained from nutgalls.

Form.—A yellowish-white to light-brown powder.

Odor and Taste.—Almost odorless and a strong astringent taste.

Solubility.—Very soluble in water, alcohol or glycerin.

Incompatibles.—Salts of antimony, copper, iron, lead, mercury and silver; chlorates, permanganates and other oxidizers; alkaloids, spirit of nitrous ether, lime-water, albumin, etc.

Average Dose.—8 grains (0.5 Gm.).

Official Preparations.

Glyceritum Acidi Tannici (Gen., Glyceriti Acidi Tannici). Eng., Glycerite of Tannic Acid. A thick, heavy liquid containing 20 per cent. of Tannic Acid dissolved in Glycerin.

Average Dose.—30 minims (2 mils).

Trochisci Acidi Tannici (Gen., Trochiscorum Acidi Tannici). Eng., Troches of Tannic Acid. Each troche contains about 1 grain of Tannic Acid.

Unguentum Acidi Tannici (Gen., Unguenti Acidi Tannici). Eng., Ointment of Tannic Acid. An ointment containing 20 per cent. of Tannic Acid.

Therapeutic Action.—Astringent and styptic.

Uses.—Used as a local application in tonsillitis, pharyngitis, etc.; also to arrest bleeding from nasal, gastric or other mucous membrane. Frequently employed as such or more commonly as a tannate in the treatment of diarrhea or dysentery. Used as such or in the form of catechu, tea, etc., as an antidote for poisoning with alkaloids, tartar emetic, etc.

Administration.—*Internally.* Tannic Acid is seldom prescribed as such, but agents containing it are employed, as tincture of kino, tincture of catechu, etc. *Locally* it is used in dusting powders, ointments, solutions and suppositories.

Some formulæ are illustrated in the following:

In the treatment of salivation:

℞[1]		or	
Acidi Borici,			
Acidi Tannici	āā. gr. xl	2	5
Mellis Rosæ	f℥ij	8	0
Aquæ	q. s. f℥vj	180	0

M.

Sig.—Use as a mouth-wash every two hours.

As an application in the treatment of tonsillitis, pharyngitis, etc.:

℞		or	
Tinct. Iodi	f℥ij	8	
Glyc. Acidi Tannici	q. s. f℥j	30	

M.

Sig.—Apply twice daily.

It is sometimes prescribed in suppositories, as in the following for hemorrhoids:

℞		or	
Ext. Stramonii	gr. iij		20
Acidi Tannici	gr. xij		75
Plumbi Acetatis	gr. iij		20
Ol. Theobromatis	q. s.		

M. ft. suppos. no. vj.

Sig.—Use one night and morning.

In enemas it is sometimes employed, as in the following for dysentery:

℞		or	
Acidi Tannici	gr. xl	2	50
Acidi Borici	℥iv	15	00

M.

Sig.—Use a heaping teaspoonful in quart of hot water as enema.

[1] White and Martin: Genito-urinary and Venereal Diseases.

As an antidote in alkaloidal or tartar-emetic poisoning, where tannic acid as such cannot be obtained, strong tea, tincture of catechu, tincture of kino, etc., may be used.

ACIDUM TARTARICUM.

Latin, Acidum Tartaricum (Gen., Acidi Tartarici). Eng., Tartaric Acid. Formula, $H_2C_4H_4O_6$. An organic acid usually prepared from Argol—a sediment in wine casks.

Form.—Usually a white powder.

Odor and Taste.—Odorless with an acid taste.

Solubility.—In 0.75 part of water and 3.3 parts of alcohol.

Incompatibles.—Salts of calcium, mercury, lead, etc.

Average Dose.—8 grains (0.5 Gm.).

Official Preparations.

Tartaric Acid enters into a large percentage of the effervescing preparations.

Therapeutic Action.—Refrigerant, astringent, antiseptic.

Uses.—Used in pharmaceutical manufacturing, but not often a prescription ingredient.

Administration.—For effect potassium bitartrate or potassium and sodium tartrate are used.

ACIDUM TRICHLORACETICUM.

Latin, Acidum Trichloraceticum (Gen., Acidi T[illegible]. Eng., Trichloracetic Acid.

Form.—White, soluble, deliquescent crystals.

Therapeutic Action.—Caustic, germicide.

Uses.—It is used as a caustic in the treatment of ulcers, new growths, etc. Seldom prescribed.

ACONITINA.

See Aconitum.

ACONITUM.

Latin, Aconitum (Gen., Aconiti). Eng., Aconite. Synonyms, Monkshood, Wolfbane, Aconite Root. The dried tuberous root of *Aconitum napellus.*

Principal Constituents.—Aconitine, about 0.5 per cent.

Average Dose.—½ grain (0.03 Gm.).

Official Preparations.

Extractum Aconiti (Gen., Extracti Aconiti). Eng., Extract of Aconite. A powder about four times the strength of the powdered root.
Average Dose.—1/6 grain (0.01 Gm.).

Fluidextractum Aconiti (Gen., Fluidextracti Aconiti). Eng., Fluidextract of Aconite.
Average Dose.—½ minim (0.03 mil).

Tinctura Aconiti (Gen., Tincturæ Aconiti). Eng., Tincture of Aconite. Represents 10 per cent. of Aconite, in alcohol 70 per cent. and water 30 per cent.
Average Dose.—5 minims (0.3 mil).
Before the eighth revision of the Pharmacopœia this preparation was 35 per cent., so allowance must be made for dosage of old books.

Aconitina (Gen., Aconitinæ). Eng., Aconitine.
Average Dose.—1/400 grain (0.00015 Gm.).

Therapeutic Action.—Depressant, antipyretic (?), diaphoretic, antiseptic, local anodyne.

Uses.—This drug is not used as much as formerly. It is sometimes given in the early stages of fevers of the sthenic type, as pneumonia, bronchitis, tonsillitis, etc. Recommended in combination with other agents for the reduction of high blood-pressure. Locally the tincture is extensively used in combination with tincture of iodine as an application in the treatment of tonsillitis, diphtheria, scarlatina, toothache, swollen glands, furuncles, infections, etc.

Administration.—Aconite is usually employed in the form of the tincture either alone or with other agents. It is miscible with water or alcohol in any proportions. Aconitine is seldom prescribed or used. It is sometimes administered hypodermically by the physician.

The manner of prescribing is shown in the following:

In the treatment of the primary stages of conditions characterized by high temperature, tension, etc.:

℞		or
Potassii Citratis	ʒiv	15
Tinct. Aconiti	fʒiss	6
Spir. Ætheris Nit.	fʒiv	15
Aquæ Menth. Pip.	fʒij	60

M.
Sig.—Teaspoonful in water every three hours until relieved.

Or:

℞[1]		or
Tinct. Aconiti	♏xx	1|3
Liq. Ammonii Acet.	f℥ij	60|0
Liq. Potassii Cit.	q. s. f℥iv	120|0

M.

Sig.—Tablespoonful in water every two hours.

In the interval treatment of spasmodic laryngitis:

℞[2]		or
Tinct. Aconiti	♏viij	|5
Syr. Ipecacuanhæ	f℥iss	6|0
Tinct. Opii Camph.	f℥iij	12|0
Liq. Potassii Cit.	q. s. f℥iij	90|0

M.

Sig.—Teaspoonful in water every two hours. (Shake-label.)

As a local application for toothache, inflamed glands, furuncle, etc.:

℞		or
Tincturæ Iodi,		
Tincturæ Aconiti	āā. f℥ss	15

M.

Sig.—Apply as directed. (Poison-label.)

In the treatment of neuralgia (to be applied with friction along the course of the affected nerve):

℞[3]		or
Tinct. Aconiti,		
Chloroformi	āā. f℥iv	15
Lin. Saponis	q. s. f℥i	120

M.

Sig.—Apply as directed. (Poison-label.)

In the treatment of epididymitis:

℞[4]		or
Tincturæ Aconiti,		
Tincturæ Opii	āā. f℥j	30
Liq. Plumbi Subacet.	f℥ij	60
Aquæ	q. s. f℥vj	180

M.

Sig.—Keep applied on cotton.

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[1] Hughes: Practice of Medicine.

[2] *Ibid.*

[3] Shoemaker: Materia Medica and Therapeutics.

[4] White and Martin: Genito-urinary and Veneral Diseases.

ADEPS.

Latin, Adeps (Gen., Adipis). Eng., Lard. The purified internal fat of the abdomen of the hog.

Official Preparation.

Adeps Benzoinatus (Gen., Adipis Benzoinati). Eng., Benzoinated Lard. A soft, white solid containing the soluble constituents of 1 per cent. of Benzoin.

Odor and Taste.—Pleasant odor, bland taste.

Incompatibles.—Aqueous and alcoholic liquids.

Therapeutic Action.—Emollient.

Uses.—It is used as a vehicle for ointments. It is not as frequently employed as petrolatum or ointment of rose-water. It is more apt to become rancid on the druggist's shelves, or if kept for an extended time by the patient. In some localities it is so seldom employed as to render it difficult to obtain a usable article.

Administration.—The following illustrates the employment of lard in prescribing.

In the treatment of scabies:

℞[1]		or	
Sulphuris Loti,			
Olei Cadini,			
Cretæ Præp.	āā. ʒij		8
Saponis Mollis	ʒv		19
Adipis	q. s. ʒij		60

M.

Sig.—Rub in thoroughly.

Used in the treatment of grain-itch:

℞[2]		or	
Betanaphtholis	gr. xxx		2|0
Sulphuris Præcip.	gr. xl		2|5
Adipis Benzoinati	q. s. ʒj		30|0

M.

Sig.—Apply as directed.

[1] Ohmann-Dumesnil: Diseases of the Skin.

[2] Musser and Kelly: Practical Treatment.

ADEPS LANÆ.

Latin, Adeps Lanæ (Gen., Adipis Lanæ). Eng., Wool-fat. The purified fat of the wool of sheep, freed from water. Used almost exclusively in the form of the

Official Preparation.

Adeps Lanæ Hydrosus (Gen., Adipis Lanæ Hydrosi). Eng., Hydrous Wool-fat. Synonym, Lanolin. The purified fat of the wool of the sheep combined with not less than 25 nor more than 30 per cent. of water.

Form.—A nearly white, ointment-like mass.

Odor and Taste.—Very slight odor or taste.

Solubility.—Insoluble in water or alcohol.

Therapeutic Action.—Emollient.

Uses.—This is an excellent vehicle for ointments where absorption is desirable. It is used as a vehicle itself, but more frequently combined with other agents.

Administration.—The hydrous preparation is used almost exclusively. It is particularly employed as an ointment base where absorption of the active constituents through the skin is desired. Owing to its rather sticky character it is seldom employed alone. The following illustrates its use:

In the treatment of tinea barbæ:

℞[1]		or
Chrysarobini	℥j	4
Adipis Lanæ Hyd.	℥ss	15
Ung. Aquæ Rosæ	q. s. ℥j	30

M.

Sig.—Apply thoroughly once a day.

In the treatment of eczema of the scrotum:

℞[2]		or
Camphoræ, Chlorali Hydrati	āā. gr. xx	1 3
Adipis Lanæ Hyd.	℥ss	15 0
Ung. Aquæ Rosæ	q. s. ℥j	30 0

M.

Sig.—Apply liberally several times daily.

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[1] Ohmann-Dumesnil: Diseases of the Skin.

[2] *Ibid.*

In the treatment of acute bronchitis:

℞[1]		or
Guaiacolis	3ss	2
Methylis Salicyl.	f3j	4
Adipis Lanæ Hyd. q. s.	3j	30

M.
Sig.—Apply to chest as directed.

In the treatment of dermatitis:

℞[2]		or
Phenolis	gr. xij	8
Bismuthi Subnit.	3iss	60
Adipis Lanæ Hyd.	3ij	80
Ung. Zinci Oxidi q. s.	3j	300

M.
Sig.—Apply locally.

ÆTHER.

Latin, Æther (Gen., Ætheris). Eng., Ether. Synonyms, Sulphuric Ether; Ethyl Ether. Formula $(C_2H_5)_2O$.

Form.—A colorless liquid.

Odor and Taste.—Characteristic odor and a burning and sweetish taste.

Solubility.—In about 12 volumes of water. Miscible in all proportions with alcohol.

Average Dose.—15 minims (1 mil).

Official Preparation.

Spiritus Ætheris (Gen., Spiritus Ætheris). Eng., Spirit of Ether. Synonyms, Hoffmann's Anodyne, Hoffmann's Drop.

Ether, 325 mils; Alcohol, to 1000 mils.

Average Dose.—1 fluidrachm (4 mils).

Formerly there were two spirits of ether, the above and another known as the Compound Spirit of Ether, which contained, in addition to 32.5 per cent. of Ether, 2.5 per cent. of Ethereal Oil. It was this latter preparation which was known as Hoffmann's Anodyne.

Therapeutic Action.—Anesthetic; also variously classed as a stimulant, sedative, anodyne, antispasmodic, carminative, diaphoretic, anthelmintic. It should be remembered that the Spirit of Ether is a habit-forming drug.

[1] Musser and Kelly: Practical Treatment.
[2] Ashton: Practice of Gynecology.

Uses.—Extensively employed by inhalation for general anæsthesia. By needle it is recommended in shock, poisoning by certain narcotics, etc. By mouth the spirit is used in the treatment of acute indigestion, flatulence, hysteria and abdominal cramps of intestinal origin. Locally it is used for cleaning the skin and sometimes as a spray for local anesthesia.

Administration.—Ether is seldom prescribed as such. The Spirit of Ether is the preparation of common choice, and is either prescribed alone or with other agents.

In the treatment of acute indigestion, particularly in hysterical patients:

℞		or
Spir. Ætheris,		
Tinct. Valerianæ Am.	āā. f℥ss	15
M.		

Sig.—Teaspoonful in water every two hours if necessary.

Used in the treatment of acute indigestion:

℞[1]		or
Tinct. Opii Camph.	f℥iij	12
Spir. Ammoniæ Arom.,		
Spir. Ætheris	āā f℥ss	15
Tinct. Lavandulæ Comp.	q. s. f℥ij	60
M.		

Sig.—Teaspoonful well diluted every fifteen minutes until relieved.

In the treatment of flatulence, hysteria, etc.:

℞[2]		or
Sodii Bicarbonatis	gr. xl	3
Spir. Ammoniæ Arom.,		
Tinct. Zingiberis	āā. f℥ss	15
Spir. Ætheris	q. s. f℥ij	60
M.		

Sig.—Two (2) teaspoonfuls in water. Repeat when necessary. (Shake-label.)

In the treatment of psoriasis:

℞[3]		or
Chrysarobini	3j	4|0
Acidi Salicylici	gr. xx	1|3
Ætheris	f3j	4|0
Olei Ricini	♏x	|6
Collodii	q. s. f℥j	30|0
M.		

Sig.—Paint on affected parts.

[1] Musser and Kelly: Practical Treatment.
[2] Shoemaker: Materia Medica and Therapeutics.
[3] Stelwagon: Diseases of the Skin.

SPIRITUS ÆTHERIS NITROSI.

Latin, Spiritus Ætheris Nitrosi (Gen., Spiritus Ætheris Nitrosi). Eng., Spirit of Nitrous Ether. Synonym, Sweet Spirit of Nitre. Contains about 4 per cent. of Ethyl Nitrite.

Form.—A clear, yellowish liquid.

Odor and Taste.—Fragrant ethereal odor and burning taste.

Solubility.—Miscible with water and alcohol in all proportions.

Incompatibles.—Acacia, acetanilide, acetphenetidin, antipyrine, carbonates, iodides, tannic acid, ferrous sulphate, fluidextract of buchu, tincture of guaiac, etc.

Average Dose.—30 minims (2 mils).

Official Preparation.

Spirit of Nitrous Ether is contained in Mistura Glycyrrhizæ Composita.

Therapeutic Action.—Recommended as a diuretic, diaphoretic, antipyretic.

Uses.—Used in the treatment of retention of urine, renal colic, gonorrhea, etc.; also in the early stages of bronchitis, colds, etc., particularly in children.

Administration.—Spirit of Nitrous Ether is prescribed alone or with other agents.

Prescribed alone, as in acute retention of urine, renal colic, etc.:

℞		or
Spir. Ætheris Nit.	f℥j	30

Sig.—Teaspoonful in hot lemonade every two hours until relieved.

In a diuretic combination, as in the treatment of renal colic, cystitis, gonorrhea, retention of urine, etc.:

℞		or
Potassii Citratis	ʒvj	23
Tinct. Belladon. Fol.	f℥ij	8
Spir. Ætheris Nit.	f℥iss	45
Aquæ q. s.	f℥iij	90

M.

Sig.—Teaspoonful in glass of water every four hours.

Used as an antipyretic in the acute diseases of childhood:

℞[1]		or
Tinct. Aconiti	♏xvj	1
Spir. Ætheris Nit.	f℥iij	12
Liq. Potassii Cit. q. s.	f℥ij	60

M.

Sig.—Teaspoonful every two hours.

[1] Hughes: Practice of Medicine.

In the treatment of ascites:

℞[1]		or
Potassii Acetatis	ʒj	30
Spir. Ætheris Nit.	fʒss	15
Inf. Digitalis	q. s. fʒiv	120

M.

Sig.—Two (2) teaspoonfuls every six hours.

In the treatment of bronchitis, cough, etc. (for child 4 years old):

℞		or
Potassii Citratis	gr. lxxx	5
Spir. Ætheris Nit.	fʒij	8
Syr. Ipecacuanhæ	fʒss	2
Syr. Limonis	fʒiv	15
Aquæ	q. s. fʒij	60

M.

Sig.—Teaspoonful in water every two hours.

This amount of ipecac may produce nausea in some patients.

ÆTHYLIS CARBAMAS.

Latin, Æthylis Carbamas (Gen., Æthylis Carbamatis). Eng., Ethyl Carbamate.

Form.—Colorless crystals or scales.

Average Dose.—15 grains (1 Gm.).

Therapeutic Action.—Hypnotic.

Uses.—It is used to induce sleep when the insomnia is not the result of pain or discomfort. Seldom prescribed.

ÆTHYLIS CHLORIDUM.

Latin, Æthylis Chloridum (Gen., Æthylis. Chloridi). Eng., Ethyl Chloride. A colorless liquid.

Therapeutic Action.—Anesthetic.

Uses.—Employed to produce local and general anesthesia. It is used as a general anesthetic when only a brief period of unconsciousness is desired, or when rapid effect is wished. It is often used at the beginning of anesthesia, and then followed with ether.

As a local anesthetic it acts by rapid evaporation from the surface on which it is sprayed; heat is removed and the part may be rapidly frozen.

Ethyl Chloride is on the market in bottles, but the most con-

[1] Hughes: Practice of Medicine.

venient package for general use is that equipped with a device that permits any part to be used as a spray and the balance retained.

ÆTHYLMORPHINÆ HYDROCHLORIDUM.

See Opium, p. 239.

AGAR.

Latin, Agar. Eng., Agar. Synonym, Agar-agar. A dried, mucilaginous substance abstracted from certain marine Algæ growing along the coast of Asia.

Odor and Taste.—Almost odorless and tasteless.

Average Dose.—2½ drachms (10 Gm.).

Uses.—Employed in the treatment of constipation.

Administration.—It is usually ordered to be taken with some cereal at mealtime.

ALCOHOL.

Latin, Alcohol (Gen., Alcoholis). Eng., Alcohol. Synonyms, Spiritus Rectificatus, Spiritus Vini Rectificatus, Rectified Spirit, etc. Formula, C_2H_5OH.

Form.—A colorless liquid containing not less than 94.9 per cent. by volume of absolute *Ethyl Alcohol.*

Odor and Taste.—Slight odor and burning taste.

Solubility.—Miscible in all proportions with water, chloroform, ether, glycerin and most oils.

Incompatibles.—Acacia, albumin, bromine, chlorine, chromium trioxide, permanganates.

Official Preparations.

Alcohol is a constituent of the majority of official liquids, as fluidextracts, spirits, tinctures, wines, etc.

Alcohol Dehydratum (Gen., Alcoholis Dehydrati). Eng., Dehydrated Alcohol. Synonym, Absolute Alcohol. A liquid containing not less than 99 per cent. of C_2H_5OH.

Alcohol Dilutum (Gen., Alcoholis Diluti). Eng., Diluted Alcohol. Synonym, Proof Spirit. Alcohol, 500 mils; water, 500 mils.

Unofficial Preparations.

Spiritus Vini Gallici (Gen., Spiritus Vini Gallici). Eng., Brandy. Contains from 44 to 55 per cent. by volume of absolute alcohol.

Spiritus Frumenti (Gen., Spiritus Frumenti). Eng., Whiskey. Contains from 44 to 55 per cent. by volume of absolute alcohol.

Vinum Album (Gen., Vini Albi). Eng., White Wine. Contains from 8.5 to 15 per cent. by volume of absolute alcohol.

Vinum Rubrum (Gen., Vini Rubri). Eng., Red Wine. Contains 8.5 to 15 per cent. by volume of absolute alcohol.

Vinum Xericum (Gen., Vini Xerici). Eng., Sherry Wine. Usually contains about 15 per cent. of alcohol.

Therapeutic Action.—Antiseptic, germicide, diaphoretic, possibly stimulant, hypnotic and nutrient.

Uses.—Used in medicine as a preservative and solvent. Extensively employed for cleaning the skin for operations and for cleansing instruments. Used in antiseptic solutions for dressing wounds, infections, etc., and for suppurative conditions, as otitis media. Recommended as a dressing to abort furuncles, felons, etc. Alcohol as such, or various dilutions, are used for giving sponge baths to reduce temperature in febrile conditions and to prevent bedsores in protracted illness. It is sometimes used in concentration to harden the skin, as to prevent chafing from trusses or other mechanical devices, and to relieve local areas of excessive perspiration. Internally alcoholic liquids are frequently employed for pneumonia, bronchitis, etc., and brandy, particularly, is quite frequently used in the treatment of dysentery, diarrhea, typhoid fever, and other related troubles.

Administration.—Alcohol as a solvent is not often prescribed as such by the physician, but alcoholic tinctures, spirits, etc., are employed.

For its effect, alcohol is often a factor in selecting a vehicle.

Some prescriptions illustrating the uses of alcohol follow:

To abort furuncle:

℞		or
Hydrarg. Chlor. Corros.	gr. j	.06
Alcoholis q. s.	f℥j	30.00

M.

Sig.—Saturate pad and keep applied to boil. (Poison-label.)

In the treatment of alopecia:

℞[1]		or
Resorcinolis	gr. lxxx	5.0
Quininæ	gr. xv	1.0
Olei Ricini	♏xx	1.3
Alcoholis q. s.	f℥iv	120.0

M.

Sig.—Apply as directed.

[1] Stelwagon: Diseases of the Skin.

For "liver spots," freckles, etc.:

℞		or
Acidi Salicylici	gr. xx	1|3
Alcoholis	q. s. f℥j	30|0

M.
Sig.—Apply to spots three times a day.

When used only as a stimulant, brandy or whisky is usually employed. For example:

For the exhaustion attendant upon intestinal trouble, etc. (in a child 2 years old):

℞		or
Spir. Vini Gallici Opt.	f℥vj	23|
Aquæ	q. s. f℥iij	90|

M.
Sig.—Teaspoonful in water every four hours.

In the treatment of bronchitis:

℞[1]		or
Tinct. Opii Camph.,		
Spir. Vini Gallici,		
Glycerini	āā. f℥j	30|

M.
Sig.—Teaspoonful every three hours.

For cough, bronchitis, colds, etc.:

℞		or
Sodii Citratis	℥j	30|
Limonis Succi,		
Spir. Vini Gallici	āā f℥j	30|
Tinct. Opii Camph.	f℥ss	15|
Syr. Acidi Citrici	q. s. f℥iv	120|

Sig.—Teaspoonful in water every two hours.

ALOE.

Latin, Aloe (Gen., Aloes). Eng., Aloes. Synonym, Gum Aloes. The inspissated juice of the leaves of *Aloe Perryi* Baker, yielding Socatrine Aloes; or

Aloe vera Linné, yielding Curaçao Aloes; or

Aloe ferox Miller, yielding Cape Aloes.

Form.—Brownish masses.

Odor and Taste.—Disagreeable odor and bitter, nauseous taste.

[1] Musser and Kelly: Practical Treatment.

Active Constituents.—Aloin (5 to 30 per cent.), etc.
Average Dose.—4 grains (0.25 Gm.).

Official Preparations.

Tincturæ Aloes.—Tincture of Aloes.
Average Dose.—30 minims (2 mils).

Aloes is contained in the Compound Extract of Colocynth and the Compound Tincture of Benzoin.

Aloinum (Gen., Aloini). Eng., Aloin. An active principle obtained from Aloes.
Form.—A yellowish powder.
Odor and Taste.—Disagreeable odor and intensely bitter taste.
Solubility.—In 65 parts of water and 10.75 parts of alcohol.
Average Dose.—¼ grain (0.015 Gm.).

Unofficial Preparation of Aloin.

Pilulæ Laxativæ Compositæ. Eng., Compound Laxative Pills. Synonym, Pills Aloin, Strychnine, Belladonna and Ipecac; Pills A., S., B. and I.
Each pill contains about: Aloin, 0.0130 (gr. ⅕); Strychnine, 0.0005 (gr. 1/135); Ex. Belladon. Leaves, 0.0080 (gr. ⅛); Ipecac, 0.0040 (gr. 1/16).
Average Dose.—2 pills.

Therapeutic Action.—Purgative, emmenagogue, abortifacient.

Uses.—For constipation, particularly of the chronic type, and for amenorrhea.

Administration.—Of the preparations of and from Aloes, Aloin is the one most often used. It is usually prescribed as the Compound Laxative Pills or in some other combination of purgatives. Its employment is based to some extent on the belief that Aloes acts particularly on the lower part of the intestinal tract.

As a laxative in tuberculosis:

℞[1] or

Mas. Hydrargyri,
Aloes Pulv.,
Ipecacuanhæ Pulv.,
Capsici Pulv. .....āā. gr. xij | 8

M. ft. cap. no. xxiv.
Sig.—One at night.

[1] Musser and Kelly: Practical Treatment.

In the treatment of chlorosis associated with constipation:

℞[1]		or
Aloes Pulv.	gr. xl	3
Mas. Ferri Carb.	ʒij	8
Pulv. Aromatici	q. s.	

M. ft. cap. no. xl.
Sig.—Two (2) at bedtime.

In the treatment of amenorrhea (to be used six days before expected period):

℞[2]		or
Aloini	gr. ij	13
Mas. Ferri Carb.	gr. xxx	2 00
Apiol	f3j	4 00

M. ft. cap. no. xij.
Sig.—One morning and evening.

ALTHÆA.

Latin, Althæa. Eng., Althæa. The dried root of *Althæa officinalis*, deprived of the brown, corky layer and small roots and carefully dried.

Therapeutic Action.—Emollient, demulcent.

Uses.—It is used in the manufacture of some pharmaceutical preparations, etc., but is seldom prescribed.

ALUMEN.

Latin, Alumen (Gen., Alumenis). Eng., Alum. Synonym, Potassium Alum. It contains not less than 99.5 per cent. of $AlNH_4(SO_4)_2 + 12H_2O$ or $AlK(SO_4)_2 + 12H_2O$.

The label of the container must indicate whether the salt is Ammonium or Potassium Alum.

The Potassium Alum has been the official alum till the present U. S. P. (IX).

Form.—Large colorless crystals or crystalline fragments.

Odor and Taste.—Odorless, and having a sweetish and strongly astringent taste.

Solubility.—Potassium Alum is soluble in 7.2 parts of water, and insoluble in alcohol.

Ammonium Alum is somewhat less soluble in water.

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[1] Shoemaker: Materia Medica and Therapeutics.
[2] *Ibid.*

Incompatibles.—Alkalies; salts of lead, mercury, and iron; borates, carbonates, phosphates, tartrates, tannic acid, etc.

Average Dose.—8 grains (0.5 Gm.).

Official Preparation.

Alumen Exsiccatum (Gen., Alumenis Exsiccati). Eng., Exsiccated Alum. Synonyms, Dried Alum, Burnt Alum. One hundred parts of Alum are deprived of water of crystallization by heat till reduced to 55 parts by weight.

Form.—A white granular powder.

Odor and Taste.—See Alum.

Solubility.—Slowly and usually incompletely soluble in 20 parts of water. Insoluble in alcohol.

Incompatibles.—See Alum.

Therapeutic Action.—Astringent, styptic, emetic.

Uses.—There are three forms of alum on the market: Lump alum, powdered alum, and the exsiccated alum.

"Powdered alum" is not the dried product, but should be the weaker product obtained by powdering the lumps without exsiccating.

Alum or exsiccated alum is used locally to arrest bleeding. In solution it is employed locally in the treatment of hyperidrosis, to harden the skin, as in tender feet, and as a vaginal douche in vaginitis, cystocele, etc. It is still sometimes employed as an emetic, but more desirable agents are usually available. Recommended in the treatment of lead colic.

By enema, it is employed for energetic action, particularly to promate the removal of intestinal gas and intestinal parasites.

Administration.—Seldom prescribed for internal use.

For External Use.—Powdered Alum and the Exsiccated Alum are sometimes prescribed, either alone or with other agents, as astringent powders, lotions, douches, etc.

As an enema or vaginal douche:

℞		or
Alumenis Pulv.	ʒij	60

Sig.—Use heaping teaspoonful to half-gallon hot water as directed.

This would call for the powder made by pulverizing the lumps and not for the exsiccated product.

In the treatment of herpes, bromidrosis, etc.:

℞[1]		or
Alumenis Exsic.	ʒss	2
Phenylis Salicyl.	ʒss	2
Bismuthi Subnit.	ʒj	4
Ung. Zinci Oxidi q. s.	ʒj	30

M.
Sig.—Apply.

ALUMINI HYDROXIDUM.

Latin, Alumini Hydroxidum. Eng., Aluminum Hydroxide. A white powder.

AMMONIUM.

Official Salts and Preparations.

AQUA AMMONIÆ (Gen., Aquæ Ammoniæ). Eng., Ammonia Water. Synonym, Hartshorn. An aqueous solution containing about 10 per cent. by weight of gaseous ammonia.

Average Dose.—15 minims (1 mil).

AQUA AMMONIÆ FORTIOR. Eng., Stronger Ammonia Water. An aqueous solution containing about 28 per cent. by weight of gaseous ammonia.

SPIRITUS AMMONIÆ AROMATICUS (Gen., Spiritus Ammoniæ Aromatici). Eng., Aromatic Spirit of Ammonia. An almost colorless aromatic liquid becoming slightly darker on standing.

Ammonuim Carbonate, 34 Gm.; Ammonia Water, 90 mils; Oil of Lemon, 10 mils; Oil of Lavender, 1 mil; Oil of Nutmeg, 1 mil; Alcohol, 700 mils; Water, to make 1000 mils.

Average Dose.—30 minims (2 mils).

Aromatic Spirit of Ammonia is used in making Tinctura Guaiaci Ammoniata and Tinctura Valerianæ Ammoniata.

Therapeutic Action.—Stimulant, carminative, irritant.

Uses.—As a stimulant in syncope, asphyxia, collapse and poisoning from narcotic or depressant agents. Frequently employed for acute indigestion, hysteria, etc.

Administration.—When used alone it may be prescribed as:

℞		or
Spir. Ammon. Arom.	fʒj	30

Sig.—Half (½) teaspoonful in water every hour when necessary.

[1] Shoemaker: Materia Medica and Therapeutics.

Or:

℞		or
Spir. Ammon. Arom.,		
Tinct. Aurant. Dulc.	āā. f℥ss	15

M.

Sig.—Teaspoonful in water every hour when necessary.

In the treatment of headache following a debauch:

℞[1]		or
Ammonii Bromidi	℥iij	12
Spir. Ammoniæ Arom.	f℥iv	15
Elix. Aromatici	q. s. f℥iij	90

M.

Sig.—Two (2) teaspoonfuls in water every two hours till relieved.

In the treatment of acute indigestion:

℞		or
Sodii Bicarbonatis	℥j	4
Spir. Ammon. Arom.	f℥ss	15
Spir. Ætheris	q. s. f℥j	30

M.

Sig.—"Shake." Teaspoonful in water every two hours till relieved.

In the treatment of acute indigestion:

℞[2]		or
Tinct. Opii Camp.	f℥iij	12
Spir. Ammoniæ Arom.,		
Spir. Ætheris	āā f℥ss	15
Tinct. Lavandulæ Comp.	q. s. f℥ij	60

M.

Sig.—Teaspoonful well diluted every fifteen minutes until relieved.

LINIMENTUM AMMONIÆ. Eng., Ammonia Liniment.

LIQUOR AMMONII ACETATIS. Eng., Solution of Ammonium Acetate. Synonym, Spirit of Mindererus. A colorless aqueous solution containing about 7 per cent. of Ammonium Acetate.

Average Dose.—4 fluidrachms (15 mils).

Therapeutic Action.—Diuretic, diaphoretic, refrigerant.

Uses.—Sometimes used in fevers, nephritis, etc.

Administration.—Its employment is illustrated in the following:

[1] Musser and Kelly: Practical Treatment.
[2] *Ibid.*

For acute febrile conditions:

℞[1]		or
Tinct. Aconiti	♏xx	1|3
Liq. Ammonii Acet.	f℥ij	60|0
Liq. Potassii Cit.	q. s. f℥iv	120|0

M.

Sig.—Tablespoonful every two hours.

AMMONII BENZOAS.—See Benzoates, p. 92.

AMMONII BROMIDUM.—See Bromides, p. 100.

AMMONII CARBONAS (Gen., Ammonii Carbonatis). Eng., Ammonium Carbonate. A mixture of Acid Ammonium Carbonate and Ammonium Carbamate.

Form.—White, translucent masses or cubes.

Odor and Taste.—Strong odor of ammonia; sharp saline taste.

Solubility.—Slowly soluble in 4 parts of water; partly soluble in alcohol.

Incompatibles.—Acids, acid salts, etc.

Average Dose.—5 grains (0.3 Gm.).

Therapeutic Action.—Stimulant, expectorant.

Uses.—Principally employed in the treatment of coughs, colds, bronchitis, etc.; has been used extensively in treating pneumonia.

Ammonium carbonate should be kept in a well-stoppered bottle, and even then there is a tendency to deterioration, as evidenced by the formation of a powder on the surface of the hard, translucent lumps. This powder should be discarded.

Administration.—It is almost always given in solution, usually in some flavored syrup. Its employment is illustrated in the following:

As an expectorant:

℞		or
Ammonii Carb.	℥iss	6|00
Tinct. Hyoscyami	f℥iv	15|00
Syr. Pruni Virg.	q. s. f℥iv	120|00

M.

Sig.—Teaspoonful every two hours till relieved.

In the treatment of capillary bronchitis of infants:

℞[2]		or
Ammonii Carb.	gr. xx	1|3
Syr. Tolutani	f℥ss	15|0
Liq. Ammonii Acet.	q. s. f℥iij	90|0

M.

Sig.—Teaspoonful in water every two hours.

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[1] Hughes: Practice of Medicine.

[2] Shoemaker: Materia Medica and Therapeutics.

AMMONII CHLORIDUM (Gen., Ammonii Chloridi). Eng., Ammonium Chloride. Synonyms, Ammonium Muriate, Sal Ammoniac.

Form.—A white, crystalline powder.

Odor and Taste.—Odorless; a disagreeable saline taste.

Solubility.—In 2.6 parts of water, 100 parts alcohol, or 8 parts glycerin.

Average Dose.—5 grains (0.3 Gm.).

Official Preparation.

Trochisci Ammonii Chloridi. Eng., Troches of Ammonium Chloride. Each troche contains about 1½ grains of the salt.

Therapeutic Action.—Expectorant, diuretic, diaphoretic, stimulant.

Uses.—Principally employed in the treatment of coughs, colds, bronchitis, pneumonia, etc. It is used to promote the absorption of ecchymoses, also to increase the solubility of corrosive mercuric chloride.

Administration.—Ammonium Chloride seems to be the salt of choice as an expectorant. Its ready solubility and comparative freedom from incompatibility facilitates its use in any reasonable combination. The common cough syrups, as "Syr. Pine Co.," "Honey and Tar," etc., etc., usually contain about 8 grains to the fluidounce. Some expectorant combinations are shown in the following:

As an expectorant:

℞		or	
Apomorphinæ Hydrochlor.	gr. ss		03
Ammonii Chloridi	ʒj	4	00
Limonis Succi	f℥j	30	00
Syr. Acidi Citrici	q. s. f℥iij	90	00

M.

Sig.—Teaspoonful in water every two hours till relieved.

Or:

℞		or	
Diacetylmorph. Hydrochlor.	gr. ij		13
Ammonii Chloridi	ʒij	8	00
Syr. Ipecacuanhæ	f℥ij	8	00
Syr. Pruni Virg.	q. s. f℥iv	120	00

M.

Sig.—Teaspoonful every two hours till relieved.

In the treatment of the laryngo-bronchial irritation of influenza:

℞[1]		or
Codeinæ Sulph.	gr. iv	26
Ammonii Chlor.	ʒij	8 00
Syr. Pruni Virg.	fʒij	60 00
Spir. Juniperis Comp.	q. s. fʒiv	120 00

M.

Sig.—Teaspoonful in water every three hours.

In the treatment of an acute exacerbation of dry chronic bronchitis:

℞[2]		or
Ammonii Chloridi	ʒij	8
Tinct. Hyoscyami,		
Syr. Scillæ Comp.	āā fʒiv	15
Aquæ Chloroformi	q. s. fʒiij	90

M.

Sig.—Teaspoonful in water every three hours.

Recommended to promote the absorption of ecchymosis:

℞		or
Ammonii Chloridi	ʒj	30
Aquæ	q. s. fʒiv	120

M.

Sig.—Wet pad of gauze and keep applied.

AMMONII IODIDUM.—See Iodum, p. 202.

AMMONII SALICYLAS.—See Acidum Salicylicum, p. 33.

AMMONII VALERAS.—See Valeriana, p. 317.

AMYGDALA AMARA.

Latin, Amygdala Amara (Gen., Amygdalæ Amaræ). Eng., Bitter Almond. The ripe seed of *Prunus amygdalus;* var., *amara.*

Bitter Almond is not official, but there are the following:

Official Constituent and Preparations.

Oleum Amygdalæ Amaræ. Eng., Oil of Bitter Almond.

Average Dose.—½ minim (0.03 mil).

Aqua Amygdalæ Amaræ. Eng., Bitter Almond-water. Contains 0.1 per cent. of the Oil of Bitter Almond.

Average Dose.—1 fluidrachm (4 mils).

Spiritus Amygdalæ Amaræ. Eng., Spirit of Bitter Almond. Contains 1 per cent. of the Oil of Bitter Almond.

Average Dose.—8 minims (0.5 mil).

[1] Anders: Practice of Medicine.

[2] Hughes: Practice of Medicine.

Therapeutic Action.—Classed as a sedative, depressant, antispasmodic, and flavor.

Uses.—Recommended for cough and some other conditions.

Administration.—Seldom prescribed.

AMYGDALA DULCIS.

Latin, Amygdala Dulcis. Eng., Sweet Almond. The ripe seeds of *Prunus Amygdalus dulcis.*

Official Preparation and Constituent.

Emulsum Amygdalæ. Eng., Emulsion of Almond. Represents about 6 per cent. of the sweet almond.

Average Dose.—4 fluidounces (120 mils).

Oleum Amygdalæ Expressum. Eng., Expressed Oil of Almond.

Average Dose.—1 fluidounce (30 mils).

The Expressed Oil of Almond is contained in several official preparations.

Therapeutic Action.—Demulcent and nutrient.

Uses.—Principally employed in the preparation of ointments, emulsions, etc.

Administration.—Seldom prescribed as such.

AMYLIS NITRIS.

Latin, Amylis Nitris (Gen., Amylis Nitritis). Eng., Amyl Nitrite. Formula, $C_5H_{11}NO_2$. A liquid containing about 80 per cent. of absolute amyl nitrite.

Average Dose.—By inhalation, 3 minims (0.2 mil).

Therapeutic Action.—Vasodilator and antispasmodic.

Uses.—Conditions characterized by high blood-pressure, and requiring prompt remedial action, as angina pectoris. Recommended for epilepsy, convulsions, seasickness, vomiting of pregnancy, etc.

Administration.—The three drugs, Amyl Nitrite, Nitroglycerin and Sodium Nitrite are employed for the same effect. Amyl Nitrite being the most rapid and transient, Nitroglycerin next, and Sodium Nitrite the slowest and most lasting.

Amyl Nitrite is usually administered by inhalation. The most convenient form is the "pearls," which are little glass bulbs each containing a few minims. These can be crushed in the handkerchief and inhaled when needed. It should be remembered that the drug is very volatile and inflammable.

AMYLUM.

Latin, Amylum (Gen., Amyli). Eng., Starch. Synonym, Corn Starch.

Form.—A white powder or white masses.

Odor and Taste.—Odorless and tasteless.

Solubility.—Insoluble in water or alcohol. Forms a whitish, gelatinous paste when boiled with water.

Official Preparations.

Glyceritum Amyli. Eng., Glycerite of Starch. Starch, 10 Gm.; Water, 10 mils; Glycerin, 80 Gm.

Therapeutic Action.—Protective and diluent.

Uses.—Employed with other agents in the treatment of prickly heat, chafing, dermatitis, etc. Prepared by boiling with water it is used in baths for the relief of skin diseases characterized by itching, as pruritus, eczema, etc. It is an antidote for iodine poisoning.

Administration.—The only common employment of starch in prescription writing is in various powders and ointments.

In the treatment of prickly heat:

℞		or	
Acidi Salicylici	gr. x		6
Acidi Borici	ʒj	4	0
Zinci Oxidi	ʒiv	15	0
Amyli	℥j	30	0

M.
Sig.—Apply as directed.

Or:

℞[1]		or	
Acidi Borici,			
Talci Pur.,			
Zinci Oxidi,			
Amyli	āā. ʒij		8

M.
Sig.—Apply freely.

[1] Stelwagon: Diseases of the Skin.

In the treatment of the lesions of smallpox:

℞[1]		or	
Hydrarg. Ammon.	gr. x		65
Amyli,			
Zinci Oxidi	āā. ʒij	8	00
Petrolati	q. s. ℥j	30	00

M.

Sig.—Apply as directed.

ANISUM.

Latin, Anisum (Gen., Anisi). Eng., Anise. Synonym, Aniseed. The ripe fruit of *Pimpinella anisum.*

Average Dose.—8 grains (0.5 Gm.).

Official Preparations and Constituent.

Oleum Anisi. Eng., Oil of Anise, Oil of Star Anise.
Average Dose.—3 minims (0.2 mil).

Aqua Anisi. Eng., Anise Water.
Average Dose.—4 fluidrachms (15 mils).

Spiritus Anisi. Eng., Spirit of Anise. Contains 10 per cent. of the oil.
Average Dose.—30 minims (2 mils).

Oil of Anise is contained in several other official preparations.

Therapeutic Action.—Stimulant, stomachic, expectorant and flavor.

Uses.—Employed almost exclusively as a flavoring agent.

Administration.—Seldom prescribed.

ANTIMONII et POTASSII TARTRAS.

Latin, Antimonii et Potassii Tartras (Gen., Antimonii et Potassii Tartratis). Eng., Antimony and Potassium Tartrate. Synonym, Tartar Emetic.

Form.—Colorless crystals or white powder.

Odor and Taste.—Odorless and a sweet, afterward disagreeable, metallic taste.

Solubility.—In 12 parts water. Insoluble in alcohol.

Incompatibles.—Alkalies, lead salts, gallic and tannic acids, etc.

Average Dose.—Expectorant, $\frac{1}{12}$ grain (0.005 Gm.).

Official Preparations.

Antimony and Potassium Tartrate is contained in Compound Syrup of Squill (0.2 per cent.) and in small amount in Compound Mixture of Glycyrrhiza.

[1] Musser and Kelly: Practical Treatment.

Therapeutic Action.—Expectorant, emetic, pustulant.

Uses.—Sometimes used in the treatment of coughs, colds, bronchitis, etc.

Toxicology.—Poisoning with tartar emetic is rather frequent, particularly among children, as it is a constituent of many ant-poisons. The symptoms are: vomiting, purging, rice-water and bloody stools, abdominal and epigastric pain, muscular cramps, prostration. Treatment.—The stomach should be washed out with a solution of tannic acid and enough of the antidote left in the stomach to act on any remaining poison. An infusion of green tea is frequently employed, as the caffeine content is also desirable. Demulcents, as milk or olive oil, should be given freely. The patient should be kept warm and stimulants used as indicated.

Administration.—Antimony and Potassium Tartrate as such is not a popular prescription ingredient. As an emetic it has fallen into disuse with the profession almost altogether. As an expectorant the Compound Syrup of Squill is sometimes used.

ANTIPYRINA.

Latin, Antipyrina (Gen., Antipyrinæ). Eng., Antipyrine. Synonym, Phenazone.

Form.—Usually a colorless crystalline powder.

Odor and Taste.—Almost odorless and tasteless.

Solubility.—In less than 1 part of water. In 1.3 parts of alcohol.

Incompatibles.—Acids and drugs containing tannic acid in appreciable amounts; alkalies, salts of iron, mercury, lead and arsenic; iodine and iodides; sodium bicarbonate and salicylate; alum, benzoates, phenol, cinchona alkaloids, resorcin, spirit of nitrous ether, thymol, etc.

Average Dose.—5 grains (0.3 Gm.).

Therapeutic Action.—Antipyretic, sedative, analgesic.

Uses.—Employed in the treatment of fevers, headache, neuralgia, whooping-cough, etc.

Administration.—Antipyrine is so generally incompatible with other drugs that it is better to remember the few desirable agents with which it can be prescribed to advantage. This would include few others than caffeine, sodium bromide and flavored syrups. It is the most soluble of the common coal-tar antipyretics. It is prescribed alone in powders, capsules or in solution.

Antipyrine may be prescribed as:

℞		or
Antipyrinæ	gr. xl	2|5
Elix. Aromatici	q. s. f℥j	30|0

M.

Sig.—Teaspoonful in water every two hours when necessary.

A frequent combination of antipyrine is shown in the following prescription for the paroxysmal stage of whooping-cough:

For a child 4 years old:

℞		or
Antipyrinæ	ʒss	2|
Sodii Bromidi	ʒj	4|
Syr. Tolutani	q. s. f℥ij	60|

M.

Sig.—Teaspoonful in water every two hours until relieved.

Tinctura Belladonnæ Foliorum is sometimes added.

As a hypnotic, analgesic, cough sedative and antispasmodic:

℞[1]		or
Codeinæ Sulphatis	gr. ss	|03
Antipyrinæ	gr. xvj	1|00
Syrupi Aurantii	q. s. f℥ij	60|00

M.

Sig.—Teaspoonful every two hours when needed.
(Child 2 years old).

It is sometimes used by the physician as a local application, as in the following formula used by the rhinologist on cotton applicators to relieve congestion of the nasal mucosa:

℞		or
Cocainæ Hydrochlor.	gr. v	|3
Antipyrinæ	gr. xv	1|0
Aquæ Dest.	q. s. f℥j	30|0

M.

Sig.—Formula.

APOMORPHINÆ HYDROCHLORIDUM.

See Opium, p. 242.

AQUA.

Latin, Aqua (Gen., Aquæ). Eng., Water. Formula, H_2O. Potable water in its purest obtainable state. This is the great vehicle of medicine. The old custom still adhered to by some physi-

[1] Ruhrah: Diseases of Children.

cians of prescribing rain-water, river-water, etc., is not recommended, as the one prescribed may not be obtainable by the particular pharmacist handling the order, and if the word water is employed the purest potable water will be used. Distilled water should only be specified when its use is particularly indicated.

Aqua Ammoniæ.—See Ammonium.
Aqua Ammoniæ Fortior.—See Ammonium.
Aqua Amygdalæ Amaræ.—See Amygdala Amara.
Aqua Anisi.—See Anisum.
Aqua Aurantii Florum.—See Aurantium.
Aqua Aurantii Florum Fortior.—See Aurantium.
Aqua Camphoræ.—See Camphora.
Aqua Chloroformi.—See Chloroformum.
Aqua Cinnamomi.—See Cinnamomum.
Aqua Creosoti.—See Creosotum.
Aqua Destillata.—See Aqua Destillata.
Aqua Destillata Sterilizata.—See Aqua Destillata.
Aqua Fœniculi.—See Fœniculum.
Aqua Hamamelidis.—See Hamamelis.
Aqua Menthæ Piperitæ.—See Mentha Piperita.
Aqua Menthæ Viridis.—See Mentha Viridis.
Aqua Rosæ.—See Rosa Gallica.
Aqua Rosæ Fortior.—See Rosa Gallica.

AQUÆ AROMATICÆ.

Latin, Aquæ Aromaticæ. Eng., Aromatic Waters. Aromatic waters, when prepared from volatile oils, are intended to be, as nearly as practicable, saturated solutions which must be clear and free from solid impurities, and, unless otherwise specified, should be prepared by using 0.2 per cent. of the volatile oil in distilled water.

AQUA DESTILLATA.

Latin, Aqua Destillata (Gen., Aquæ Destillatæ). Eng., Distilled Water. 1000 volumes of water are distilled. The first 100 volumes, which contain the volatile impurities, are rejected. The next 750 volumes constitutes Distilled Water (U. S. P.). The remaining water contains the non-volatile impurities and is rejected.

This should be the vehicle used in prescribing solutions of silver nitrate, potassium permanganate, corrosive mercuric chloride, boric acid, calcium chloride, lead acetate and subacetate, iron sulphate, zinc sulphate, tartar emetic, and it is usually desirable for simple solutions of alkaloidal salts. It is entirely unnecessary to make common

use of distilled water. Such employment may be well attributed by the pharmacist to the ignorance of the prescriber.

AQUA DESTILLATA STERILIZATA.

Latin, Aqua Destillata Sterilizata (Gen., Aquæ Destillatæ Sterilizatæ). Eng., Sterilized Distilled Water.

This should be the vehicle used for making solutions for hypodermic or intravenous use, and for eye-washes, etc.

ARGENTUM—Silver.

(Not Official.)

Official Salts and Preparations.

ARGENTI NITRAS (Gen., Argenti Nitratis). Eng., Silver Nitrate. Formula, $AgNO_3$.

Form.—Colorless crystals becoming dark on exposure to light in the presence of organic matter.

Odor and Taste.—Odorless; bitter, caustic, metallic taste.

Solubility.—In 0.4 part water and in 30 parts alcohol (incompatible).

Incompatibles.—Acetates, arsenites, bromides, carbonates, chlorides, chromates, cyanides, hypophosphites, iodides, phosphates, sulphides, sulphates, tartrates, acids (except nitric), alkalies, alkaloids, alcohol, creosote, and organic matter generally.

Average Dose.—1/6 grain (0.01 Gm.).

Official Preparation.

Argenti Nitras Fusus. Eng., Moulded Silver Nitrate. Synonyms, Caustic, Lunar Caustic. Hard white pencils or cones made by treating 100 Gm. of Silver Nitrate with 4 Gm. of Hydrochloric Acid and melting and moulding the product.

ARGENTI OXIDUM. Eng., Silver Oxide.

Average Dose.—1 grain (0.06 Gm.).

Therapeutic Action.—Silver Nitrate and Caustic are antiseptic, germicide, astringent and caustic.

Uses.—Silver Nitrate is sometimes used by mouth in such conditions as gastric catarrh, gastric ulcer, etc. By rectum for ulceration, fissure, amœbic dysentery, etc. It is used as an application for tonsillitis, diphtheria, scarlatina, ulcers, chancroids, and kindred conditions. It is used in eye diseases, particularly for the prevention and cure of gonorrheal ophthalmia. Frequently used for vaginitis, endometritis, etc.

Toxicology.—Acute poisoning by silver nitrate is rare. It would probably be recognized, if seen early, by the whitish appearance of

the mouth and throat; if seen later, by the characteristic dark color of the skin around the mouth. The antidote is sodium chloride. Argyria is the condition resulting from the continued use of a silver salt. In the superficial circulation of the exposed parts of the body it is acted upon by the light and deposited in the skin, giving a bluish tint to the complexion. The condition has been considered beyond relief. Hexamethylenamine has recently been recommended.

Administration.—Practically the only preparations of silver employed by the physician are the Nitrate and the Fused Nitrate. The latter is frequently used by the physician, but seldom prescribed. Silver Nitrate is practically always prescribed alone.

Silver Nitrate, or Lunar Caustic, should not be prescribed for the patient's use. When used as a caustic, the well-known discoloration is slow in developing, and much damage is often done. The areas affected seem rather prone to inflammatory changes.

The discoloration may sometimes be removed by the careful use (by the physician) of a 1 per cent. aqueous solution of potassium cyanide.

Internally.—The drug if prescribed is probably best administered in the form of the pills prepared by the pharmaceutical manufacturing houses. They may be ordered as:

℞
Pil. Argenti Nitratis (gr. ¼) ..... no. xx.
Sig.—One three times a day.

Locally.—Silver Nitrate is not often prescribed to be used by the patient, but is frequently employed by the physician in the form of aqueous solution. The strength of the solution varies from 1 : 5 to 1 : 1000.

For the eyes of the newborn a 1 per cent. solution is usually employed.

As an application for tonsillitis, etc., the 5, 10, or 20 per cent. solutions are used.

Overaction may be prevented by neutralizing with normal salt solution.

Solutions for the prescriber's use may be ordered as:

℞		or
Argenti Nitratis	gr. xiv	3|
Aquæ Destillatæ	q. s. f℥j	30|

M.
Sig.—Ten per cent. solution of silver nitrate. (Poison-label.)

Unofficial Salts of Silver.

ARGYROL.—A proteid salt of silver (silver vitellin) in the form of black hygroscopic scales representing about 30 per cent. of metallic silver. It is freely soluble in water, forming a dark-colored solution that stains material brown to black.

Therapeutic Action.—Said to be an antiseptic, germicide, antipruritic, etc.

Uses.—Extensively employed in solution as a non-irritating application in the treatment of pharyngitis, tonsillitis, rhinitis, conjunctivitis, etc. Used as an injection for gonorrhea and cystitis; also as an application for vaginitis, vulvitis, pruritus vulvæ and kindred conditions.

Administration.—Usually employed in solution in distilled water in from 5 per cent. to 25 per cent. strength.

In the treatment of gonorrhea:

℞		or
Argyrol	ʒiij	12
Aquæ Dest. ..... q. s.	fʒvj	180

M.
Sig.—Inject after urination.

A 20 per cent. solution of argyrol as is used in tonsillitis, vaginitis, etc., may be ordered as:

℞		or
Argyrol	gr. xc	6
Aquæ Dest. ..... q. s.	fʒj	30

M.
Sig.—Apply as directed.

PROTARGOL.—A proteid compound of silver representing about 8 per cent. of the metal.

A yellow powder, slowly but freely soluble in water.

Therapeutic Action.—Said to be an antiseptic and germicide.

Uses.—Employed in the treatment of gonorrhea, cystitis, tonsillitis, ulcers, etc.

Administration.—Usually employed in aqueous solution.

ARNICA.

Latin, Arnica (Gen., Arnicæ). Eng., Arnica. Synonyms, Arnica Flowers, Leopard's bane. The dried flower-heads of *Arnica montana.*

Official Preparation.

Tinctura Arnicæ (Gen., Tinctura Arnicæ). Eng., Tincture of Arnica. Represents 20 per cent. of the drug.

Average Dose.—15 minims (1 mil).

Therapeutic Action.—Arnica has been variously classed as an irritant, carminative, tonic, etc.

Uses.—The use of arnica is largely confined to the application of the tincture alone, or with other agents, for bruises, sprains, rheumatism, etc.

Administration.—Seldom prescribed internally. The tincture is sometimes employed externally with other agents in the form of a liniment.

ARSENUM—Arsenic.

(*Not Official.*)

Official Salts and Preparations.

ARSENI IODIDUM. Eng., Arsenous Iodide. Synonym, Arsenic Iodide.

Average Dose.—1/12 grain (0.005 Gm.).

Liquor Arseni et Hydrargyri Iodidi. Eng., Solution of Arsenous and Mercuric Iodides. Synonym, Donovan's Solution. A clear or slightly yellowish aqueous liquid containing about 1 per cent. of Arsenous Iodide and 1 per cent. of Red Mercuric Iodide.

Incompatibles.—See Arseni Trioxidum and Hydrargyrum.

Average Dose.—1½ minims (0.1 mil.).

ARSENI TRIOXIDUM (Gen., Arseni Trioxidi). Eng., Arsenic Trioxide. Synonyms, Arsenous Acid, White Arsenic (the latter term is usually applied to the impure commercial article).

Form.—Heavy white powder or irregular masses.

Odor and Taste.—Odorless and practically tasteless.

Solubility.—Slowly soluble in from 30 to 100 parts of water. Sparingly soluble in alcohol.

Incompatibles.—Tannic acid; salts of iron, copper, and magnesium; lime water, iodides, etc. In the very dilute solutions in which arsenic is used, incompatibility is seldom a factor.

Average Dose.—1/30 grain (0.002 Gm.).

Liquor Acidi Arsenosi (Gen., Liquoris Acidi Arsenosi). Eng., Solution of Arsenous Acid. Synonym, Solution of Arsenic Chloride. A colorless aqueous solution containing 1 per cent. of Arsenic Trioxide.

Incompatibles.—See Arseni Trioxidum.

Average Dose.—3 minims (0.2 mil).

Liquor Potassii Arsenitis (Gen., Liquoris Potassii Arsenitis). Eng., Solution of Potassium Arsenite. Synonym, Fowler's Solution. A slightly colored aqueous solution in the preparation of which 1 per cent. Arsenic Trioxide is used.

Incompatibles.—See Arseni Trioxidum.
Average Dose.—3 minims (0.2 mil).

SODII ARSENAS. Eng., Sodium Arsenate.
Average Dose.—1/12 grain (0.005 Gm.).

Sodii Arsenas Exsiccatus. Eng., Exsiccated Sodium Arsenate.
Average Dose.—1/20 grain (0.003 Gm.).

Liquor Sodii Arsenatis. Eng., Solution of Sodium Arsenate. Contains 1 per cent. of Exsiccated Sodium Arsenate.
Average Dose.—3 minims (0.2 mil).

Therapeutic Action.—Alterative, tonic, escharotic.

Uses.—Employed in the treatment of malaria, anemia, syphilis pellagra, goiter, neurasthenia, hysteria, chorea, and various skin diseases, as eczema, herpes, etc. Locally it is used in dentistry and in the treatment of cancer.

Toxicology.—Among the symptoms of acute arsenic poisoning are epigastric and abdominal pain, nausea, vomiting, rice-water and bloody stools, purging, tenesmus, dryness of throat, thirst, frequent micturition, albuminuria, depression, skin lesions and edema. The treatment consists principally in washing out the stomach with a suspension of freshly precipitated ferric hydroxide with magnesium oxide and leaving in the stomach enough of the antidote to act upon any remaining arsenic. If this official antidote is not available or the ingredients for making it, the tincture of ferric chloride with magnesium oxide or "Milk of Magnesia" may be used. Morphine may be cautiously used for the intestinal condition and demulcents freely given. The patient should be kept warm and stimulants used as indicated. The patient should be kept under observation several days, as symptoms may recur. Chronic arsenic poisoning is usually first manifested by edema, particularly under the eyes.

Administration.—The taste and odor of Fowler Solution is disagreeable to some patients, and the solution of arsenous acid should not be overlooked. Some useful prescriptions illustrating the employment of Arsenic are shown in the following:

The prescription for the rather extensively used Asiatic Pill (best given in capsule) is as follows:

℞[1]		or
Arseni Trioxidi	gr. ij	13
Piperis Pulv.	3ij	8|00
Ext. Gentianæ	3ij	8|00

M. ft. cap. no. lx.
Sig.—One after each meal.

[1] Ohmann-Dumesnil: Diseases of the Skin.

As a tonic in malaria, etc.:

℞		or
Arseni Trioxidi	gr. ij	130
Strychninæ Sulph.	gr. j	065
Quininæ Sulph.	gr. cl	10 000
Massæ Ferri Carb.	gr. cl	10 000

M. ft. cap. no. L.
Sig.—One after each meal.

As a general tonic in debility, anemia, etc., the quinine sulphate is reduced to about 50 grains. Ferrum Reductum (about 100 grains) may be substituted for the Massa Ferri Carbonatis, particularly when there is constipation.

In the treatment of neurasthenia, hysteria, etc.:

℞[1]		or
Arseni Trioxidi	gr. ss	03
Asafœtidæ Pulv.	gr. x	65
Ext. Sumbul,		
Ferri Sulph. Exsic.	āā. gr. xx	1 30

M. ft. cap. no. xx.
Sig.—One after each meal.

As a postoperative tonic:

℞[2]		or
Hydrarg. Chlor. Corros.,		
Arseni Trioxidi	āā. gr. j	065
Ext. Nucis Vomicæ	gr. xxv	1 600
Ferri et Quin. Cit.	gr. cc	13 000

M. ft. cap. no. c.
Sig.—One after each meal.

The extensively used combination of "Four Chlorides" is shown in the following:

℞		or
Hydrarg. Chlor. Corros.	gr. ij	13
Liq. Acidi Arsenosi	f℥ij	8 00
Tinct. Ferri Chloridi,		
Acidi Hydrochl. Dil.,		
Glycerini	āā. f℥j	30 00
Aquæ	q. s. f℥vj	180 00

M.
Sig.—Teaspoonful in water after meals.

[1] Shoemaker: Materia Medica and Therapeutics.
[2] Ashton: Practice of Gynecology.

In combination as a tonic, particularly in the treatment of malaria:

℞		or
Quininæ Sulph.	ʒij	8
Liq. Acidi Arsenosi	fʒij	8
Tinct. Ferri Chloridi	fʒvj	23
Glycerini	fʒj	30
Aquæ q. s.	fʒvj	180

M.

Sig.—Teaspoonful in water after meals.

In the treatment of the chronic vomiting of childhood:

℞[1]		or
Liq. Potas. Arsenitis	♏xij	75
Sodii Bicarbonatis	gr. xxiv	1 50
Aquæ Menth. Pip. q. s.	fʒiij	90 00

M.

Sig.—Teaspoonful three times a day.

When it is desired to give arsenic alone or to give for some particular effect it may be ordered as follows:

℞		or
Liq. Acidi Arsenosi	fʒj	30

Sig.—Begin with three (3) drops as directed.

Or:

℞		or
Liq. Potas. Arsenitis	fʒiss	6
Elix. Aromatici q. s.	fʒiv	120

M.

Sig.—Teaspoonful with water after meals.

ASAFŒTIDA.

Asafœtida (Gen., Asafœtidæ). Eng., Asafetida. Synonym, Gum Asafetida. A gum-resin obtained by incising the rhizomes and roots of *Ferula asafœtida* and *Ferula fœtida,* and of some other species of *Ferula* indigenous to Persia and adjacent countries, yielding not less than 60 per cent. (or, if powdered, 50 per cent.) of alcohol-soluble constituents.

Form.—a soft solid usually appearing in the form of brownish, irregular masses.

Odor and Taste.—Disagreeable odor and taste.

[1] Ruhrah: Diseases of Children.

Solubility.—Active constituents insoluble in water. Soluble in alcohol.

Average Dose.—4 grains (0.25 Gm.).

Official Preparations.

Emulsum Asafœtidæ. Eng., Emulsion of Asafetida. Contains 4 per cent. of Asafetida.

Average Dose.—4 fluidrachms (15 mils).

Pilulæ Asafœtidæ. Eng., Pills of Asafetida. Each pill contains about 3 grains of Asafetida.

Average Dose.—2 pills.

Tinctura Asafœtidæ. Eng., Tincture of Asafetida. Represents 20 per cent. of Asafetida in alcohol.

Average Dose.—15 minims (1 mil.).

Therapeutic Action.—Carminative, sedative, antispasmodic.

Uses.—By mouth it is sometimes given for nervousness, hysteria, flatulence, whooping-cough and kindred conditions. By enema it is extensively used to relieve the tympanites of typhoid, pelvic inflammation, peritonitis, etc.

Administration.—Owing to the extremely disagreeable odor and taste, asafetida is not often prescribed for administration by mouth.

The following prescriptions illustrate its employment:

℞
Pil. Asafœtidæ ..... no. x
Sig.—One after each meal.

Or:

℞ or
Asafœtidæ Pulv.,
Sodii Bicarbonatis .....āā. ℥ss 2
M. ft. cap. no. x.
Sig.—One after each meal.

In the treatment of neurasthenia, hysteria, etc.:

℞[1] or
Arseni Trioxidi ..... gr. ss 03
Asafœtidæ Pulv. ..... gr. x 65
Ext. Sumbul,
Ferri Sulph. Exsic. .....āā. gr. xx 1 30
M. ft. cap. no. xx.
Sig.—One after each meal.

[1] Shoemaker: Materia Medica and Therapeutics.

As an enema to remove intestinal gas:

℞		or
Tinct. Asafœtidæ	f℥ij	60

Sig.—Use tablespoonful to ½ gallon warm water as directed.

ASPIDIUM.

Latin, Aspidium (Gen., Aspidii). Eng., Aspidium. Synonym, Male Fern. The rhizome and stipes of *Dryopterus felix-mas* or of *Dryopterus marginalis.*

Average Dose.—60 Grains (4 Gm.).

Official Preparation.

Oleoresina Aspidii. Eng., Oleoresin of Aspidium.
Average Dose.—30 grains (2 Gm.).

Therapeutic Action.—Tæniafuge and anthelmintic.

Uses.—It is used almost exclusively for the removal of tapeworms.

Administration.—If used at all it should be employed with extreme caution, and castor oil or other fixed oils avoided.

In the treatment for tapeworm:

℞		or
Oleoresinæ Aspidii	f℥j	4|0
Chloroformi	♏x	|6
Glycerini .....q. s.	f℥ss	15|0

M.
Sig.—No. 1.
For doctor's use.

℞		or
Oleoresinæ Aspidii	f3j	4|00
Olei Tiglii	gtt. ij	|13
Chloroformi	♏x	|65
Glycerini .....q. s.	f℥ss	15|00

M.
Sig.—No. 2.
Take an hour after No. 1.

No. 1 is administered on an empty stomach. No. 2 is given an hour later, and is followed in an hour with purgative if necessary. Patient should be under a physician's observation during the treatment and, preferably, in a hospital.

ASPIDOSPERMA.

Latin, Aspidosperma. Synonym, Quebracho. The dried bark of *Aspidosperma quebracho blanco.*

Average Dose.—60 grains (4 Gm.).

Official Preparation.

Fluidextractum Aspidospermatis. Eng., Fluidextract of Aspidosperma. *Average Dose.*—1 fluidrachm (4 mils).

Uses.—Has been used in the treatment of asthma, emphysema, bronchitis, etc.

Administration.—Seldom prescribed.

ATROPINA.

See Belladonna, p. 86.

ATROPINA SULPHAS.

See Belladonna, p. 86.

AURANTII AMARI CORTEX.

Latin, Aurantii Amari Cortex (Gen., Aurantii Amari Corticis). Eng., Bitter Orange Peel. The dried rind of the fruit of *Citrus Aurantium amara.*

Average Dose.—15 grains (1 Gm.).

Official Preparations.

Fluidextractum Aurantii Amari. Eng., Fluidextract of Bitter Orange Peel.

Average Dose.—15 minims (1 mil).

Tinctura Aurantii Amari. Eng., Tincture of Bitter Orange Peel. Represents 20 per cent. of the drug.

Average Dose.—1 fluidrachm (4 mils).

Bitter Orange Peel is used in preparing Compound Tincture of Cinchona and Compound Tincture of Gentian.

AURANTII DULCIS CORTEX.

Latin, Aurantii Dulcis Cortex (Gen., Aurantii Dulcis Corticis). Eng., Sweet Orange Peel. The fresh outer rind of the ripe fruit of *Citrus Aurantium sinensis.*

Official Preparations and Constituent.

Syrupus Aurantii. Eng., Syrup of Orange. Represents 2.5 per cent. of the drug.

Tinctura Aurantii Dulcis. Eng., Tincture of Sweet Orange Peel. Represents 50 per cent. of the drug.

Average Dose.—1 fluidrachm (4 mils).

Oleum Aurantii. Eng., Oil of Orange. Synonym, Oil of Sweet Orange. A volatile oil obtained by expression from the fresh peel of the sweet orange.

Average Dose.—3 minims (0.2 mil).

Official Preparations of the Oil.

Elixir Aromaticum. Eng., Aromatic Elixir. Synonyms, Elixir of Orange, Elixir Simplex, Simple Elixir. Contains about 1.2 per cent. of Compound Spirit of Orange and 25 per cent. alcohol, with sugar and water.

Spiritus Aurantii Compositus. Eng., Compound Spirit of Orange. Oil of Orange, 200 mils; Oil of Lemon, 50 mils; Oil of Coriander, 20 mils; Oil of Anise, 5 mils; Alcohol, to make 1000 mils.

Official Preparations of the Volatile Oil of Fresh Orange Flowers.

Aqua Aurantii Florum. Eng., Orange Flower Water. Equal parts of Stronger Orange Flower Water and Distilled Water.

Orange Flower Water is contained in several official preparations.

Aqua Aurantii Florum Fortior. Eng., Stronger Orange Flower Water. Water saturated by distillation with the Volatile Oil of fresh Orange Flowers.

This preparation is used in making troches of Tannic Acid.

Syrupus Aurantii Florum. Eng., Syrup of Orange Flowers.

Sugar 850 Gm., Orange Flower Water, to make 1000 mils.

Therapeutic Action.—Stomachic, tonic.

Uses.—These preparations of orange are used for flavoring purposes and as vehicles. The preparations of Bitter Orange Peel are also employed as bitter tonics.

Aromatic Elixir is one of the most useful vehicles in the Pharmacopœia.

The smaller drug-stores often will be unable to supply good fresh preparations of Syrup of Orange or Syrup of Orange Flowers, and the Tincture of Sweet Orange Peel and the Compound Spirit of Orange are so seldom used in some sections that they are not carried in stock.

Administration.—Some common methods of prescribing are shown in the following formulæ:

In the treatment of headache following a debauch:

℞[1]		or	
Ammonii Bromidi	3iij	12	
Spir. Ammoniæ Arom.	f3iv	15	
Elix. Aromatici	q. s. f3iij	90	

M.

Sig.—Two (2) teaspoonfuls in water every two hours till relieved.

As a hypnotic, analgesic, cough sedative and antispasmodic in childhood:

℞[2]		or	
Codeinæ Sulphatis	gr. ss		03
Antipyrinæ	gr. xvj	1	00
Syrupi Aurantii	q. s. f3ij	60	00

M.

Sig.—Teaspoonful every two hours when needed.

In the treatment of convulsions of infancy:

℞[3]		or	
Chlorali Hydrati	gr. viij		5
Sodii Bromidi	gr. xvj	1	0
Syrupi Aurantii	q. s. f3ij	60	0

M.

Sig.—Teaspoonful. Repeat in one hour if necessary.

In the treatment of tuberculosis:

℞[4]		or	
Creosoti	♏xxiv	1	5
Glycerini	f3ij	60	0
Tinct. Aurantii Dulc.	q. s. f3iij	90	0

M.

Sig.—Teaspoonful with water or milk after meals.

In the treatment of stomatitis in children:

℞[5]		or	
Potassii Chloratis	gr. xxiv	1	5
Syrupi Aurantii	f3j	30	0
Aquæ	q. s. f3iij	90	0

M.

Sig.—Teaspoonful every two hours.

[1] Musser and Kelly: Practical Treatment.
[2] Ruhrah: Diseases of Children.
[3] *Ibid.*
[4] Musser and Kelly: Practical Treatment.
[5] Ruhrah: Diseases of Children.

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AURI et SODII CHLORIDUM.

Latin, Auri et Sodii Chloridum. Eng., Gold and Sodium Chloride. A mixture of equal parts by weight of the anhydrous chlorides of gold and sodium. An orange-yellow powder, odorless, having a saline and metallic taste and deliquescent when exposed to damp air. Freely soluble in water.

Average Dose.—$\frac{1}{12}$ grain (0.005 Gm.).

Therapeutic Action.—Said to be alterative, tonic, nerve sedative, aphrodisiac.

Use.—Sometimes used in the treatment of chronic nephritis, cirrhosis of the liver, chronic gastritis, impotence, etc. Seldom prescribed.

BALSAMUM PERUVIANUM.

Latin, Balsamum Peruvianum (Gen., Balsami Peruviani). Eng., Balsam of Peru. A balsam obtained from *Toluifera Pereiræ.*

Form.—A thick, dark-brown liquid.

Odor and Taste.—An agreeable vanilla-like odor and disagreeable bitter taste.

Solubility.—Insoluble in water. Soluble in alcohol.

Therapeutic Action.— Internally, said to be expectorant, stimulant, etc. Externally, antiseptic and stimulant to granulating areas.

Uses.—Extensively employed in the treatment of burns, abscesses, indolent ulcers and kindred conditions.

Administration.—Balsam of Peru is extensively used as a local application, being prescribed either alone (as for indolent ulcers) or in combinations.

Used alone in the treatment of indolent ulcers:

℞		or
Bal. Peruviani	f℥j	30

Sig.—Apply twice daily.

In the treatment of superficial burns:

℞		or
Bal. Peruviani	f℥iv	15
Olei Ricini	q. s. f℥iv	120

M.

Sig.—Apply freely twice a day.

BALSAMUM TOLUTANUM.

Latin, Balsamum Tolutanum (Gen., Balsami Tolutani). Eng., Balsam of Tolu. A balsam obtained from *Toluifera Balsamum.*

Form.—A yellowish-brown plastic solid becoming brittle when old or dried or exposed to cold.

Official Preparations.

Syrupus Tolutanus. Eng., Syrup of Tolu. Represents about 1 per cent. of the drug.

Average Dose.—4 fluidrachms (15 mils).

Tinctura Tolutana. Eng., Tincture of Tolu. Represents about 20 per cent. of the drug.

Average Dose.—30 minims (2 mils).

Tolu is employed in several other official preparations.

Therapeutic Action.—Expectorant, stomachic.

Uses.—Practically confined to the employment of its preparations as flavors and vehicles, particularly in cough preparations.

Administration.—The Syrup is the only form in which the drug is often prescribed.

In the treatment of the cough of measles:

℞[1]		or
Potassii Citratis	ʒiv	15
Limonis Succi	f℥j	30
Tinct. Opii Camph.	f3ij	8
Syr. Ipecacuanhæ	f3j	4
Syr. Tolutani	q. s. f℥ij	60

M.

Sig.—Teaspoonful in water every two hours.

In the treatment of spasmodic croup (child 2 years old):

℞[2]		or
Ammonii Bromidi	ʒss	2
Tinct. Opii Camph.	f3ss	2
Tinct. Belladon. Fol.	♏xv	1
Syr. Tolutani	f℥j	30
Aquæ	q. s. f℥ij	60

M.

Sig.—Teaspoonful in water every hour till relieved.

[1] **Anders: Practice of Medicine.**

[2] **Musser and Kelly: Practical Treatment.**

In the treatment of capillary bronchitis of infants:

℞[1]		or	
Ammonii Carb.,	gr. xx	1	3
Syr. Tolutani	f℥ss	15	0
Liq. Ammonii Acet.	q. s. f℥iij	90	0

M.
Sig.—Teaspoonful in water every two hours.

In the treatment of a cough:

℞[2]		or	
Codeinæ Sulphatis	gr. iiss		16
Potassii Citratis	℥ij	8	00
Syr. Tolutani	f℥j	30	00
Aquæ	q. s. f℥iij	90	00

M.
Sig.—Teaspoonful every two hours.

BELLADONNA.

Latin, Belladonna (Gen., Belladonnæ). Eng., Belladonna. Synonym, Deadly Night-shade.

The following parts are official:

Belladonnæ Fŏlia. Eng., Belladonna Leaves. The dried leaves of *Atropa Belladonna* yielding not less than 0.3 per cent. of alkaloids (principally atropine).

Average Dose.—1 grain (0.06 Gm.).

Belladonna Radix. Eng., Belladonna Root. The dried root of *Atropa Belladonna* yielding not less than 0.45 per cent. of alkaloids (principally atropine).

Average Dose.—¼ grain (0.045 Gm.).

Official Preparations of the Leaves.

Emplastrum Belladonnæ. Eng., Belladonna Plaster. Contains 30 per cent. of the Extract of Belladonna Leaves.

Extractum Belladonnæ Foliorum. Eng., Extract of Belladonna Leaves. Contains about 1.25 per cent. of the alkaloids of Belladonna Leaves.

Average Dose.—¼ grain (0.015 Gm.).

Tinctura Belladonnæ Foliorum. Eng., Tincture of Belladonna Leaves. Represents 10 per cent. of the drug in diluted alcohol.

Average Dose.—12 minims (0.75 mil).

[1] Shoemaker: Materia Medica and Therapeutics.
[2] Musser and Kelly: Practical Treatment.

Unguentum Belladonnæ. Eng., Belladonna Ointment. Contains 10 per cent. of the Extract of Belladonna Leaves.

Official Preparations of the Root.

Fluidextractum Belladonnæ Radicis. Eng., Fluidextract of Belladonna Root.

Average Dose.—1 minim (0.05 mil).

Linimentum Belladonnæ. Eng., Belladonna Liniment. Contains 5 per cent. of Camphor in Fluidextract of Belladonna Root.

Official Alkaloid and Salt.

Atropina. Eng., Atropine.
Average Dose.—$\frac{1}{120}$ grain (0.0005 Gm.).

Atropinæ Sulphas. Eng., Sulphate of Atropine.
Average Dose.—$\frac{1}{120}$ grain (0.0005 Gm.).

Therapeutic Action.—Stimulant, narcotic, anodyne, antispasmodic, mydriatic, rubefacient, anhydrotic, antisialic, antigalactagogue.

Uses.—Used as an antispasmodic and anodyne in connection with other agents, as morphine or bromides, in the treatment of renal colic, gall-stone colic, cramp colic, dysmenorrhea, etc. Employed with other agents for cystitis, constipation, neuralgia, asthma, whooping-cough, incontinence of urine, etc. Useful for pulmonary edema, night-sweats, salivation, hay fever, and to arrest the secretion of milk. Used externally in ointments for glandular swellings, infections, etc. Atropine or homatropine are employed to dilate the pupil.

Toxicology.—Belladonna poisoning is usually manifested by dilated pupils, dry mouth, dry and flushed skin, excitement, delirium, elevated blood-pressure and rapid pulse. Later there may follow collapse and coma. There may be a skin eruption which is usually scarlatiniform in appearance. Treatment.—In the early stages the stomach should be washed out, preferably with a solution of potassium permanganate (about 1 : 3000), and sedatives and ice-cap used as indicated. Morphine, with proper care, is serviceable. During the stage of coma, stimulants, as caffeine, camphor, etc., are indicated.

Administration.—*Internal.*—The tincture and extract and atropine sulphate are the preparations most commonly used, the tincture being used for solutions and the extract or atropine sulphate when it is desired to give in pills, capsules, etc.

Hypodermic.—Atropine Sulphate is the form employed, either alone or more commonly with morphine. It is used by the physician but not prescribed to be used by the patient.

Locally.—The extract itself or the ointment made from the extract are the preparations most commonly used.

The following prescriptions illustrate the use of the drug:

In the treatment of cystitis:

℞		or
Tinct. Belladon. Fol.	f℥ij	8
Potassii Citratis	ʒvj	23
Sodii Bromidi	ʒiv	15
Aquæ Menth. Pip. q. s.	f℥iij	90

M.

Sig.—Teaspoonful in water every four hours.

In the treatment of whooping-cough; also spasmodic croup:

℞		or
Antipyrinæ	gr. L	3
Sodii Bromidi	ʒij	8
Tinct. Belladon. Fol.	f℥ss	2
Syr. Aurantii q. s.	f℥iij	90

M.

Sig.—Teaspoonful in water every two to four hours.
(For child 5 years old).

This is not used for an extended period. In whooping-cough it is employed to control the stage of most violent paroxysms. In croup a dose is usually given in the morning, and two or three doses in the afternoon and evening, for three days.

In the treatment of gonorrhea:

℞[1]		or
Acidi Borici,		
Sodii Bromidi āā.	gr. clx	10
Tinct. Belladon. Fol.	f℥j	4
Liq. Potas. Citratis q. s.	f℥viij	240

M.

Sig.—Tablespoonful in water four times daily.

In the treatment of spasmodic croup:

℞[2]		or
Sodii Bromidi	ʒss	2
Tinct. Opii Camph.	f℥ss	2
Tinct. Belladon. Fol.	♏xv	1
Syr. Tolutani	f℥j	30
Aquæ q. s.	f℥ij	60

M.

Sig.—Teaspoonful every hour till relieved.
(For child 2 years old).

[1] White and Martin: Genito-urinary and Venereal Diseases.
[2] Musser and Kelly: Practical Treatment.

As a postoperative laxative:

℞[1]

		or
Ext. Belladon. Fol.	gr. j	065
Ext. Cascaræ Sag.	gr. xx	1 300
Ext. Colocynth. Comp.	gr. xxv	1 600

M. ft. cap. no. x.
Sig.—One at bedtime.

In the treatment of constipation:

℞[2]

		or
Ext. Cascaræ Sag.	gr. xl	2 50
Ext. Nucis Vomicæ	gr. v	32
Ext. Belladon. Fol.	gr. ij	13
Resinæ Podophylli	gr. ij	13

M. ft. cap. no. xx.
Sig.—One at bedtime.

In the treatment of coryza:

℞[3]

		or
Ext. Belladon. Fol.	gr. ss	03
Camphoræ	gr. vj	40
Quininæ Sulph., Pulv. Ipecac. et Opii	āā. gr. xij	80

M. ft. cap. no. xij.
Sig.—One every half-hour for four hours, then one every three hours.

In the treatment of inflammations, as mastitis, furuncle, inflammatory rheumatism, orchitis, etc.:

℞

		or
Camphoræ	℥ss	2
Ung. Belladon., Ichthyolis	āā. ℥ij	8
Petrolati	q. s. ℥j	30

M.
Sig.—Apply twice daily.

To relieve pain, particularly in such conditions as cystitis, oöphoritis, appendicitis, etc.:

℞

		or
Ext. Belladon. Fol.	gr. j	065
Ext. Opii	gr. iij	200
Olei Theobromatis	q. s.	

M. ft. suppos. no. iv.
Sig.—One twice daily.

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[1] Ashton: Practice of Gynecology.
[2] *Ibid.*
[3] Musser and Kelly: Practical Treatment.

In the treatment of salivation:

℞[1]		or
Atropinæ Sulphatis	gr. 1/32	.002
Sacchari Lactis	3ss	2.000

M. ft. cht. no. x.
Sig.—One every three hours until pupils dilate.

As a purgative prescription, particularly for such conditions as colds, grip, acute alcoholism, etc.:

℞		or
Atropinæ Sulph.	gr. 1/100	.0006
Strychninæ Sulph.	gr. 1/30	.002
Hydrarg. Chlor. Mitis	gr. v	.320
Ext. Cascaræ Sag.	gr. vj	.400

M. ft. cap. no. ij.
Sig.—Take one hour apart.

BENZALDEHYDUM.

Latin, Benzaldehydum. Eng., Benzaldehyde. A colorless liquid.

Average Dose.—½ minim (0.03 mil).

Used commercially as a flavoring agent.

BENZINUM PURIFICATUM.

Latin, Benzinum Purificatum. Eng., Purified Petroleum Benzin. Synonym, Purified Benzin. A colorless liquid.

BENZOINUM.

Latin, Benzoinum (Gen., Benzoini). Eng., Benzoin. Synonyms, Gum Benzoin, Gum Benjamin. A balsamic resin obtained from *Styrax Benzoin* and other species of *Styrax*. Active ingredients, Benzoic Acid, Volatile Oil, etc.

Form.—Usually appearing as brownish tears or fragments.

Odor and Taste.—Pleasant odor and slightly acid taste.

Solubility.—Active constituents soluble in alcohol. Insoluble in water.

Average Dose.—15 grains (1 Gm.).

Official Preparations.

Adeps Benzoinatus.—See Adeps, p. 49.

Tinctura Benzoini. Eng., Tincture of Benzoin. Benzoin, 200 Gm.; Alcohol, to make 1000 mils.

[1] White and Martin: Genito-urinary and Venereal Diseases.

Average Dose.—15 minims (1 mil).

Tinctura Benzoini Composita. Eng., Compound Tincture of Benzoin. Synonym, Friar's Balsam. Benzoin, 100 Gm.; Storax, 80 Gm.; Balsam of Tolu, 40 Gm.; Purified Aloes, 20 Gm.; Alcohol, to make 1000 mils.

Average Dose.—30 minims (2 mils).

The tincture and the compound tincture are frequently employed.

Therapeutic Action.—Expectorant.

Uses.—The tinctures of benzoin are sometimes used by mouth as expectorants for cough, bronchitis, etc. By inhalation the compound tincture is frequently used for cough, bronchitis, pneumonia, croup, etc. Externally the tinctures are employed in cosmetics to add sticking qualities and as protectives.

The use of Benzoin by inhalation in bronchitis, whooping-cough, etc., is shown in the following:

℞ or

Tinct. Benzoini Co. ..... f℥ij 60|

Sig.—Use teaspoonful to pitcher of hot water as directed.

℞ or

Creosoti ..... f℥ij 8|

Tinct. Benzonini Co. .....q. s. f℥ij 60|

M.

Sig.—Use teaspoonful to pitcher of hot water as directed.

Written instructions should be given in detail as to the method of employment. Usually for about fifteen minutes every three hours.

The Compound Tincture of Benzoin lends itself well to the local applicaction of remedies, as in the following for ringworm, etc.:

℞ or

Hydrarg. Chlor. Corros. ..... gr. ss |03

Tinct. Benzoini Co. .....q. s. f℥j 30|00

M.

Sig.—Paint the part twice daily.

℞ or

Acidi Salicylici ..... gr. x |6

Tinct. Benzoini Co. .....q. s. f℥j 30|0

M.

Sig.—Paint the part twice daily.

ACIDUM BENZOICUM (Gen., Acidi Benzoici). Eng., Benzoic Acid. Formula, $HC_7H_5O_2$. An organic acid obtained from benzoin or prepared synthetically.

Form.—Whitish scales or needles.
Odor and Taste.—Almost odorless and somewhat pungent taste.
Solubility.—In 2.75 parts of water and 2.3 parts of alcohol.
Average Dose.—8 grains (0.5 Gm.).

Benzoic Acid is contained in Liquor Antisepticus and Tinctura Opii Camphorata.

Official Benzoates.

Incompatibles.—Acids, ferric salts, alkali hydroxides, lead acetate, corrosive mercuric chloride.

AMMONII BENZOAS (Gen., Ammonii Benzoatis). Eng., Ammonium Benzoate. Formula, $NH_4C_7H_5O_2$.
Form.—White crystals or crystalline powder.
Odor and Taste.—Slight odor; saline, bitter, afterward slightly acid taste.
Solubility.—In about 10 parts of water or 35.5 parts of alcohol.
Average Dose.—15 grains (1 Gm.).

SODII BENZOAS (Gen., Sodii Benzoatis). Eng., Sodium Benzoate. Formula, $NaC_7H_5O_2$.
Form.—A white powder.
Odor and Taste.—Odorless; a sweetish, astringent taste.
Solubility.—In 1.8 parts of water or 61 parts of alcohol.
Average Dose.—15 grains (1 Gm.).

Therapeutic Action.—Antiseptic, stimulant, expectorant, diuretic, antipyretic.

Uses.—Principally used in the treatment of genito-urinary diseases, as gonorrhea, cystitis, etc., particularly when it is desirable to increase the acidity of the urine.

Administration.—Sodium Benzoate is the preparation most frequently used. The Benzoates may be administered in capsules or in solution in a vehicle, as water, peppermint water, or aromatic elixir.

In cystitis, gonorrhea, etc., with alkaline urine:

℞		or	
Sodii Benzoatis	.....	ʒiv	15
Potassii Bromidi	.....	ʒiij	12
Inf. Buchu	.....q. s.	fʒij	60

M.
Sig.—Two (2) teaspoonfuls in water every four hours.

For rendering the urine more acid:

℞[1]		or	
Acidi Benzoici	.....	ʒij	8
Acidi Borici	.....	ʒiij	12
Aquæ Cinnamomi	.....	fʒxij	360

M.
Sig.—Tablespoonful in water four times daily.

[1] Ashton: Practice of Gynecology.

In the treatment of acne:

℞[1]		or	
Sodii Benzoatis	.....	℥ij	8
Tinct. Nucis Vomicæ	.....	f℥ij	8
Flext. Cascaræ Sag.	.....	f℥ss	15
Tinct. Cardamomi Comp.	.....q. s.	f℥iij	90

M.

Sig.—Teaspoonful in water after meals.

BENZOSULPHINIDUM.

Latin, Benzosulphinidum (Gen., Benzosulphinidi). Eng., Benzosulphinide, Saccharin.

Form.—A white, crystalline powder.

Odor and Taste.—Nearly odorless, and intensely sweet taste.

Solubility.—In 290 parts of water or 31 parts of alcohol.

Average Dose.—3 grains (0.2 Gm.).

The product is about 500 times as sweet as sugar.

Uses.—Employed as a substitute for sugar.

Administration.—It is sometimes prescribed in formulæ, as for the "tasteless" Castor Oil (see p. 236) or to be used by diabetics in place of sugar.

BETAEUCAINÆ HYDROCHLORIDUM.

Latin, Betaeucainæ Hydrochloridum (Gen., Betaeucainæ Hydrochloridi). Synonyms, Eucaine, Eucaine Chloride. A synthetic derivative of piperidine.

Form.—A white powder.

Odor and Taste.—Odorless; local anesthetic to sense of taste.

Solubility.—Soluble in 30 parts of water and in 35 parts of alcohol.

Incompatibles.—Prescribed alone in sterile distilled water, or with the addition of solution of adrenalin chloride.

Toxicity.—Slightly less than cocaine.

Uses.—A local anesthetic.

Administration.—Not prescribed to be used by patients. It is extensively employed by the profession in aqueous solution as a local anesthetic.

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[1] Hughes: Practice of Medicine.

The Braun solution may be ordered as

℞		or	
Betaeucainæ Hydroch.	gr. iiiss		24
Sodii Chloridi	gr. xv		96
Aquæ Dest. Ster.	q. s. f℥iv	120	00

M.

Sig.—Formula.

Solution of Adrenalin Chloride may be added just before using.

BETANAPHTHOL.

Latin, Betanaphthol (Gen., Betanaphtholis). Eng., Betanaphthol. Synonym, Naphthol. A Phenol occurring in coal-tar, but usually prepared from naphthalene.

Form.—Colorless or pale buff-colored crystals or powder.

Odor and Taste.—Faint, phenol-like odor and slight pungent taste.

Solubility.—In 1000 parts of water and 0.8 part alcohol.

Incompatibles.—Antipyrine, camphor, exalgine, ferric chloride, menthol, phenol, potassium permanganate, urethane.

Average Dose.—4 grains (0.25 Gm.).

Therapeutic Action.—Antiseptic, irritant.

Uses.—Sometimes used internally for diarrhea, intestinal indigestion, flatulent dyspepsia, typhoid fever, etc. Externally, it is used for various skin diseases, as scabies, ringworms, seborrhea and kindred disorders.

Administration.—*Internally.*—It is sometimes used as a salt, particularly Bismuth Betanaphthol.

In the treatment of diarrhea of typhoid fever:

℞[1]		or	
Betanaphtholis	℥j		4
Bismuthi Subgal.	℥ij		8

M. ft. cap. no. xxiv.

Sig.—One every three hours.

Externally it is extensively used by the dermatologist.

The following will illustrate some combinations:

In the treatment of seborrhea:

℞[2]		or	
Resorcinolis	℥j	4	0
Betanaphtholis	gr. xx	1	3
Tinct. Cinchonæ Comp.	f℥iij	12	0
Spiritus Myrciæ	q. s. f℥vj	180	0

M.

Sig.—Apply twice daily.

[1] Anders: Practice of Medicine.

[2] Ohmann-Dumesnil: Diseases of the Skin.

In the treatment of seborrhea:

℞[1]		or
Betanaphtholis	f℥ij	8
Alcoholis	f℥iij	90
Spir. Myrciæ q. s.	f℥vj	180

M.
Sig.—Apply twice daily.

In the treatment of scabies:

℞[2]		or
Betanaphtholis,		
Sulphuris Præcip. āā.	℥ss	2
Petrolati q. s.	℥j	30

M.
Sig.—Apply as directed.

Used in the treatment of grain-itch:

℞[3]		or
Betanaphtholis	gr. xxx	2|0
Sulphuris Præcip.	gr. xl	2|5
Adipis Benzoinati q. s.	℥j	30|0

M.
Sig.—Apply as directed.

In the treatment of ringworm of the scalp:

℞[4]		or
Betanaphtholis	℥ss	2
Olei Cadini	℥j	4
Ung. Sulphuris q. s.	℥j	30

M.
Sig.—Apply as directed.

BISMUTHUM—Bismuth.

(Not Official.)

Official Salts.

General Character of Bismuth Salts.

Form.—All white, or nearly white, powders except the subgallate, which is yellow, and Bismuth Betanaphthol, which is brownish.

Odor and Taste.—All practically odorless and tasteless except Bismuth and Ammonium Citrate, which has a metallic taste.

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[1] Ohmann-Dumesnil: Diseases of the Skin.
[2] Hughes: Practice of Medicine.
[3] Musser and Kelly: Practical Treatment.
[4] Stelwagon: Diseases of the Skin.

Solubility.—All practically insoluble except the Bismuth and Ammonium Citrate, which is soluble in water.

Incompatibles.—As they are insoluble and usually given in dry form, incompatibility is seldom a factor. They are best not prescribed with other acids or with iodine, iodides, etc.

BISMUTHI ET AMMONII CITRAS (Gen., Bismuthi et Ammonii Citratis). Eng., Bismuth and Ammonium Citrate.

Average Dose.—2 grains (0.125 Gm.).

BISMUTHI SUBCARBONAS (Gen. Bismuthi Subcarbonatis). Eng., Bismuth Subcarbonate.

Average Dose.—8 grains (0.5 Gm.).

BISMUTHI SUBGALLAS (Gen. Bismuthi Subgallatis). Eng., Bismuth Subgallate.

Average Dose.—8 grains (0.5 Gm.).

BISMUTHI SUBNITRAS (Gen., Bismuthi Subnitratis). Eng., Bismuth Subnitrate.

Average Dose.—8 grains (0.5 Gm.).

BISMUTHI SUBSALICYLAS (Gen., Bismuthi Subsalicylatis). Eng., Bismuth Subsalicylate.

Average Dose.—8 grains (0.5 Gm.).

Therapeutic Action.—Antiseptic, astringent, protective.

Uses.—Internally used in the treatment of gastritis, hyperchlorhydria, gastric ulcer, diarrhea, dysentery, etc. Externally, in powders or ointments in the treatment of ulcers, burns, miliaria, eczema and many other skin conditions. The subnitrate (33 per cent.) with petrolatum (Beck's Paste) is used for chronic suppurating sinuses, cavities, etc., particularly of tuberculous origin.

Administration.—*Internally.*—The subnitrate is the salt of common choice, though the subgallate is considered more astringent, and the subcarbonate better for some forms of gastric disturbances. The tendency is to give large doses. These salts may be given dry or in mixtures, but when in the latter form, as the powders are heavy, care should be exercised that the liquid be sufficiently thick to hold the powder suspended while a dose is being poured.

The following examples show some usual combinations:

When it is desired to administer a bismuth salt alone it may be ordered as follows:

℞ or

Bismuthi Subnit. ..... ʒij 8|

Ft. cht. no. xij.

Sig.—One every four hours.

Or:

℞		or
Bismuthi Subnit.	gr. clx	10
Muc. Acaciæ	ʒss	15
Syr. Aurantii	q. s. fʒij	60

M.
Sig.—Teaspoonful every four hours. (Shake-label.)

In the treatment of the intestinal disturbances of childhood when the bismuth salt does not change the character of the stool it is often combined with sulphur at the time of administration. In addition to one of the prescriptions just given, another is written as follows:

℞		or
Sulphuris Præcip.	gr. xxx	2

M. ft. cht. no. xv.
Sig.—One with each dose of the other medicine.

In the treatment of diarrhea of typhoid fever:

℞[1]		or
Betanaphtholis	ʒj	4
Bismuthi Subgal.	ʒij	8

M. ft. cap. no. xxiv.
Sig.—One every three hours.

This could also be ordered in suspension in mucilage of acacia, syrup, etc.

Used for the relief of abdominal tympany:

℞[2]		or
Phenylis Salicyl.	gr. xx	1|3
Bismuthi Subnit.	gr. 1	3|0

M. ft. cap. no. x.
Sig.—One two hours after each meal.
This may be ordered in powders.

In the treatment of dysentery:

℞[3]		or
Phenylis Salicyl.,		
Bismuthi Subnit.,		
Cretæ Præp.	āā. ʒj	4

M. ft. cht. no. xij.
Sig.—One every two hours.

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[1] Anders: Practice of Medicine.
[2] Ashton: Practice of Gynecology.
[3] Shoemaker: Materia Medica and Therapeutics.

In the treatment of gastric ulcer, etc.:

℞		or	
Atropinæ Sulph.	gr. 1/15		004
Bismuthi Subnitratis	ʒiv	15	000
Magnesii Oxidi	ʒiij	12	000
Calcii Carb. Præcip.	ʒij	8	000

M. ft. cht. no. xv.
Sig.—One in a glass of milk three times a day.

In the treatment of diarrhea, dysentery, nausea, etc.:

℞		or
Bismuthi Subnit.	ʒiij	12
Spir. Chloroformi	fʒiss	6
Tinct. Opii Camph.	ʒiij	12
Spir. Vini Gallici	fʒvj	23
Mist. Cretæ q. s.	fʒiij	90

Sig.—Tablespoonful every three hours until relieved. (Shake-label.)

In the treatment of diarrhea of typhoid fever:

℞[1]		or	
Bismuthi Subnitratis	gr. clx	10	0
Phenolis Liq.	♏xxx	2	0
Tinct. Opii Deod.	fʒj	4	0
Mucil. Acaciæ	fʒj	30	0
Aquæ q. s.	fʒiv	120	0

M.
Sig.—Teaspoonful every three hours. (Shake-label.)

In the treatment of acute intestinal indigestion:

℞[2]		or	
Phenolis	gr. iv		32
Naphthaleni	gr. xxx	2	00.
Bismuthi Subsalicyl.	gr. lxxx	5	00
Glycerini	fʒj	30	00
Aquæ Chloroformi q. s.	fʒiij	90	00

M.
Sig.—Two (2) teaspoonfuls in water every two hours. (Shake-label.)

In the treatment of enterocolitis:

℞[3]		or
Bismuthi Subnitratis	ʒiij	12
Tinct. Kino,		
Tinct. Opii Camph. āā.	fʒiss	45
Mist. Cretæ q. s.	fʒvj	180

M.
Sig.—Tablespoonful every three hours. (Shake-label.)

[1] **Hughes: Practice of Medicine.**
[2] *Ibid.*
[3] *Ibid.*

Externally.—Bismuth Subnitrate is extensively used as a local application. It is prescribed either alone or with other agents.

The following will illustrate:

As a local application in the treatment of impetigo, fever blisters, etc.:

℞		or	
Hydrarg. Chlor. Mitis	gr. xv		1
Bismuthi Subnitratis	q. s. 3iv		15

M.

Sig.—Apply twice daily.

In the treatment of herpes, bromidrosis, etc.:

℞[1]		or	
Alumenis Pulv.	3j		4
Phenylis Salicyl.	3ss		2
Bismuthi Subnit.	3j		4
Ung. Zinci Oxidi	q. s. ℥j		30

M.

Sig.—Apply.

In the treatment of erythema venenatum:

℞[2]		or	
Morphinæ Sulph.	gr. v		32
Bismuthi Subnit.	3j		4 00
Ung. Aquæ Rosæ	q. s. ℥j		30 00

M.

Sig.—Apply in a thin layer.

In the treatment of ecthyma:

℞[3]		or	
Acidi Borici	gr. x		65
Bismuthi Subnit.	3j		4 00
Picis Liquidæ	gr. xx		1 30
Ung. Aquæ Rosæ	q. s. ℥j		30 00

M.

Sig.—Apply on a cloth twice daily.

In the treatment of dermatitis:

℞[4]		or	
Phenolis	gr. xij		8
Bismuthi Subnit.	3iss		6 0
Adipis Lanæ Hyd.	3ij		8 0
Ung. Zinci Oxidi	q. s. ℥j		30 0

M.

Sig.— Apply locally.

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[1] Shoemaker: Materia Medica and Therapeutics.
[2] Ohmann-Dumesnil: Diseases of the Skin.
[3] *Ibid.*
[4] Ashton: Practice of Gynecology.

BROMOFORMUM.

Latin, Bromoformum. Eng., Bromoform. A colorless liquid.

Average Dose.—3 minims (0.2 mil).

Therapeutic Action.—Antispasmodic, anesthetic.

Uses.—Has been recommended principally for the treatment of whooping-cough. Not often prescribed.

BROMUM.

(*Not Official.*)

Latin, Bromum. Eng., Bromine. A heavy, dark, brownish-red liquid.

Official Bromides.

General Characteristics.

Form.—Colorless crystals or white granular or crystalline powders.

Odor and Taste.—Odorless and having a sharp, saline, rather disagreeable taste.

Solubility.—Soluble in less than 2 parts of water and usually deliquescent. Soluble in alcohol.

Incompatibles.—Acids, acid salts, many metallic salts, alkaloids, chlorine water, salts of mercury, spirit of nitrous ether.

AMMONII BROMIDUM (Gen., Ammonii Bromidi). Eng., Ammonium Bromide. Formula, NH_4Br.

Average Dose.—15 grains (1 Gm.).

CALCII BROMIDUM (Gen., Calcii Bromidi). Eng., Calcium Bromide. Formula, $CaBr_2$.

Average Dose.—15 grains (1 Gm.).

LITHII BROMIDUM (Gen., Lithii Bromidi). Eng., Lithium Bromide. Formula, LiBr.

Average Dose.—15 grains (1 Gm.).

POTASSII BROMIDUM (Gen., Potassii Bromidi). Eng., Potassium Bromide. Formula, KBr.

SODII BROMIDUM (Gen., Sodii Bromidi). Eng., Sodium Bromide. Formula, NaBr.

Average Dose.—15 grains (1 Gm.).

STRONTII BROMIDUM (Gen., Strontii Bromidi). Eng., Strontium Bromide. Formula, $SrBr_2$.

Average Dose.—15 grains (1 Gm.).

ACIDUM HYDROBROMICUM DILUTUM. (Gen. Acidi Hydrobromici Diluti). Eng., Diluted Hydrobromic Acid. An aqueous solution containing about 10 per cent. of HBr.

Average Dose.—15 minims (1 mil).

Therapeutic Action.—Sedative, hypnotic, anodyne, antispasmodic.

Uses.—To relieve pain or produce quiet or sleep in headache, nervousness, hysteria, epilepsy, alcoholism, tetanus, rabies, strychnine poisoning, eclampsia and kindred conditions.

Administration.—It will be noted that the bromides are all white or nearly white salts freely soluble in water, forming clear, colorless solutions. Most of them will become moist on exposure to air, so should not be dispensed in powder. The taste of the salts is usually sharp, so they should be well diluted. When diluted the taste is not very disagreeable. They are best prescribed in solution in such vehicles as water, peppermint water, aromatic elixir, etc.

Potassium Bromide is the most largely used, but is not necessarily the most desirable.

The bromides may be administered by mouth or rectum.

A bromide may be ordered alone, as:

℞		or
Sodii Bromidi	3ij	8
Elix. Aromatici	q. s. f℥j	30

M.

Sig.—Teaspoonful in water every three hours when needed.

As a hypnotic, sedative, etc., they are often combined with other agents, as:

℞		or
Chlorali Hydrati	3j	4
Sodii Bromidi	3ij	8
Tinct. Hyoscyami	f3ss	2
Aquæ Menth. Pip	q. s. f℥j	30

M.

Sig.—Teaspoonful in water every four hours when necessary.

Or:

℞		or
Codeinæ Phos.	gr. iv	26
Chlorali Hydrati	3j	4 00
Potassii Bromidi	3ij	8 00
Aquæ Chloroformi	q. s. f℥j	30 00

M.

Sig.—Teaspoonful in water every four hours until relieved.

Bromides are often prescribed as:

℞		or.
Ammon. Bromidi	gr. xx	1 3
Sodii Bromidi	gr. xxx	2 0
Strontii Bromidi	gr. xxx	2 0
Potassii Bromidi	gr. xl	2 5
Syr. Aurantii	q. s. f℥j	30 0

M.

Sig.—Teaspoonful in water every three hours when necessary.

In the treatment of convulsions:

℞[1]		or
Chlorali Hydrati	gr. viij	5
Sodii Bromidi	gr. xvj	10
Syrupi Aurantii	q. s. f℥ij	60

M.

Sig.—Teaspoonful. Repeat in one hour if necessary. (For child 2 years old.)

In the treatment of acute laryngitis:

℞[2]		or
Chlorali Hydrati	gr. lxxv	5
Ammonii Bromidi	gr. xxx	2
Potassii Bromidi	gr. xlv	3
Aquæ Cinnamomi	q. s. f℥ij	60

M.

Sig.—Teaspoonful in water every twenty minutes till improvement takes place.

In the treatment of headache following a debauch:

℞[3]		or
Ammonii Bromidi	℥iij	12
Spir. Ammoniæ Arom.	f℥iv	15
Elix. Aromatici	q. s. f℥iij	90

M.

Sig.—Two (2) teaspoonfuls in water every two hours till relieved.

In the treatment of gonorrhea:

℞[4]		or
Acidi Borici,		
Sodii Bromidi	āā. gr. clx	10
Tinct. Belladon. Fol.	f℥j	4
Liq. Potas. Citratis	q. s. f℥viij	240

M.

Sig.—Tablespoonful in water four times daily.

Or:

℞[5]		or
Tinct. Veratri	♏viij	5
Potassii Bromidi,		
Sodii Bicarb.	āā. gr. clx	10
Liq. Potas. Citratis	q. s. f℥viij	240

M.

Sig.—Tablespoonful in water every two hours.

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[1] Ruhrah: Diseases of Children.
[2] Musser and Kelly: Practical Treatment.
[3] *Ibid.*
[4] White and Martin: Genito-urinary and Venereal Diseases.
[5] *Ibid.*

In the treatment of spasmodic croup:

℞[1]		or
Ammonii Bromidi	3ss	2
Tinct. Opii Camph.	f3ss	2
Tinct. Belladon. Fol.	♏xv	1
Syr. Tolutani	f3j	30
Aquæ q. s.	f3ij	60

M.

Sig.—Teaspoonful every hour till relieved. (For child 2 years old.)

Bromides are frequently used by enema, as in strychnine poisoning, convulsions, etc.:

℞		or
Chlorali Hydrati	3j	4
Sodii Bromidi	3ij	8
Aquæ q. s.	f3ij	60

M.

Sig.—Use tablespoonful to cup of warm water as enema.

BUCHU.

Latin, Buchu (Gen., Buchu). Eng., Buchu. The dried leaves of *Barosma betulina* or of *Barosma serratifolia*.

Average Dose.—30 grains (2 Gm.).

Official Preparation.

Fluidextractum Buchu. Eng., Fluidextract of Buchu.
Average Dose.—30 minims (2 mils).

Therapeutic Action.—Diuretic, urinary disinfectant, diaphoretic.

Uses.—Principally employed in the treatment of diseases of the genito-urinary tract.

Administration.—Usually prescribed in combination with other agents, the most popular preparation being the Elixir of Buchu, Juniper and Potassium Acetate.

CAFFEINA.

Latin, Caffeina (Gen., Caffeinæ). Eng., Caffeine. A feebly basic alkaloid obtained from tea (*Thea sinensis*) or coffee (*Coffea arabica*). Also occurring in other plants or prepared synthetically. Coffee contains about 0.67 to 2.25 per cent., and tea about 3.2 per cent.

Average Dose.—2½ grains (0.15 Gm.).

[1] Musser and Kelly: Practical Treatment.

Official Preparations.

Caffeina Citrata (Gen., Caffeinæ Citratæ). Eng., Citrated Caffeine. Composed of equal parts of Caffeine and Citric Acid.

Form.—A white powder.

Odor and Taste.—Odorless and a slightly bitter taste.

Solubility.—Soluble in water or alcohol.

Average Dose.—5 grains (0.3 Gm.).

Caffeina Citrata Effervescens. Eng., Effervescent Citrated Caffeine. Contains 4 per cent. Caffeine.

Average Dose.—60 grains (4 Gm.).

Caffeinæ Sodiobenzoas (Gen., Caffeinæ Sodiobenzoatis). Eng., Caffeine Sodiobenzoate. A mixture of caffeine and sodium benzoate in equal parts.

Form.—A white powder.

Odor and Taste.—Odorless and a slightly bitter taste.

Solubility.—Soluble in 1.1 parts of water; some caffeine separates on standing. Soluble in 30 parts of Alcohol.

Average Dose.—By mouth 5 grains (0.3 Gm.). Hypodermic, 3 grains (0.2 Gm.).

Therapeutic Action.—Stimulant, diurètic.

Uses.—To counteract the depressing effects of analgesics and antipyretics in the treatment of headache, neuralgia, colds, grip, etc. In the treatment of dropsy and cardiac weakness. An efficient antidote for poisoning by opium, alcohol and some other narcotics.

Administration.—Caffeine is usually prescribed in the form of citrated caffeine either in solution or dry. The Citric Acid is used to render the alkaloid more soluble. It is not a salt, but a mixture. Caffeine is also rendered more soluble by the addition of such drugs as antipyrine, potassium bromide and sodium benzoate and salicylate, etc.

The following prescriptions show some frequently used combinations:

In the treatment of colds, etc.:

℞		or	
Caffeinæ Citratæ	gr. x		6
Acidi Acetylsalicylici	gr. xl	2	5
Quininæ Hydrobrom.	gr. xx	1	3

M. ft. cap. no. xv.

Sig.—Take 6 today and 4 tomorrow.

Instructions can be given patient as to time of taking, etc., as, 1 in the morning, 2 at noon, and 3 at night.

The following has been recommended for headache:

℞[1]		or	
Acetanilidi	gr. lxxij	4	50
Caffeinæ Citratæ,			
Camphoræ Monobromatæ	āā. gr. xij		75
Sodii Bicarbonatis	gr. xlviij	3	00

M. ft. cap. no. xxiv.
Sig.—One every half-hour until four (4) are taken.

In the treatment of chronic valvular disease:

℞[2]		or	
Caffeinæ Citratæ	℥ss	2	00
Strychninæ Sulph.	gr. ⅛		02
Sparteinæ Sulph.	gr. iij		20

M. ft. cap. no. xij.
Sig.—One every four hours.

In the treatment of migraine:

℞[3]		or	
Caffeinæ Citratæ	gr. v		32
Camphoræ Monobromatæ	gr. xx	1	30
Acetphenetidini	gr. xx	1	30

M. ft. cap. no. x.
Sig.—One every two hours until relieved.

CALAMINA PRÆPARATA.

Latin, Calamina Præparata. Eng., Prepared Calamine. Not official.

A mixture of the native carbonate and silicate of zinc.

A pinkish or flesh-colored powder of earthy appearance, practically odorless and insoluble in water.

It was official in the U. S. Pharmacopœia of 1850.

Therapeutic Action.—Astringent, desiccant.

Uses.—In the treatment of herpes, some forms of eczema, ulcerations, etc.

Administration.—It is used rather frequently by the dermatologist in external applications.

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[1] Musser and Kelly: Practical Treatment.
[2] Anders: Practice of Medicine.
[3] Hughes: Practice of Medicine.

In the treatment of herpes progenitalis:

℞[1]		or	
Zinci Oxidi,			
Calaminæ Præp.	āā. gr. x		65
Glycerini,			
Alcoholis	āā. ♏xij		75
Aquæ	q. s. f℥ij	60	00

M.
Sig.—Apply freely. (Shake-label.)

CALCIUM.

(*Not Official.*)

Official Salts and Preparations of Calcium.

CALCII BROMIDUM.—See Bromum, p. 100.

CALCII CARBONAS PRÆCIPITATUS. Eng., Precipitated Calcium Carbonate. Synonym, Precipitated Chalk. Formula, $CaCO_3$.

Form.—White powder.

Odor and Taste.—Odorless and tasteless.

Solubility.—Practically insoluble in water or alcohol. This salt is used in making some other preparations of minor importance.

Average Dose.—15 grains (1 Gm.).

CALCII CHLORIDUM (Gen., Calcii Chloridi). Eng., Calcium Chloride. Formula, $CaCl_2$.

Form.—White powder.

Odor and Taste.—Odorless; sharp, saline taste.

Solubility.—In 0.62 part of water or 10 parts of alcohol.

Incompatibles.—Acids, carbonates, sulphates, etc.

Average Dose.—8 grains (0.5 Gm.).

CALCII GLYCEROPHOSPHAS.—See Glycerophosphates, p. 30.

CALCII HYPOPHOSPHIS.—See Acidum Hypophosphorosum, p. 29.

CALCII LACTAS (Gen., Calcii Lactatis). Eng., Calcium Lactate (Formula, $Ca(C_3H_5O_3)_2 + 5H_2O$).

Form.—White powder or granular masses.

Odor and Taste.—Odorless and nearly tasteless.

Solubility.—Soluble in 20 parts of water. Almost insoluble in alcohol.

Average Dose.—8 grains (0.5 Gm.).

CALCII SULPHIDUM CRUDUM. Eng., Crude Calcium Sulphide. Synonyms, Calx Sulphurata; Sulphurated Lime (U. S. P., viii). It contains not less than 55 per cent. of CaS.

Average Dose.—1 grain (0.06 Gm.).

CALX. Eng., Calcium Oxide, Lime. Synonym, Quick Lime.

CALX CHLORINATA. Eng., Chlorinated Lime. Synonym, Chloride of Lime. A product resulting from the action of chlorine upon

[1] Stelwagon: Diseases of the Skin.

calcium hydroxide and containing not less than 30 per cent. of available chlorine.

Care should be exercised to avoid confusing this with calcium chloride. Chlorinated Lime is not used internally, but is a disinfectant employed for the chlorine content. Calcium chloride is used internally and for the calcium content.

CRETA PRÆPARATA (Gen., Cretæ Præparatæ). Eng., Prepared Chalk. Synonym, Drop Chalk. A native form of Calcium Carbonate freed from most of its impurities by elutriation and containing, when dried to a constant weight, not less than 97 per cent. of $CaCO_3$.

Form.—Whitish powder often moulded into cones.

Odor and Taste.—Odorless and tasteless.

Solubility.—Practically insoluble in water or alcohol.

Incompatibles.—Acids, salicylates, alum, etc.

Average Dose.—15 grains (1 Gm.).

Mistura Cretæ. Eng., Chalk Mixture. Compound Chalk Powder, 20 Gm.; Cinnamon Water, 40 mils; Water, to make 100 mils.

Average Dose.—4 fluidrachms (15 mils).

Pulveris Cretæ Compositus. Eng., Compound Chalk Powder. Prepared Chalk, 30 Gm.; Acacia, 20 Gm.; Powdered Sugar, 50 Gm.

Average Dose.—30 grains (2 Gm.).

Prepared chalk is contained in Hydrargyrum Cum Creta.

Linimentum Calcis. Eng., Lime Liniment. Synonym, Carron Oil. Equal parts of Linseed Oil and Lime Water.

LIQUOR CALCIS. Eng., Lime Water. A saturated aqueous solution which should contain not less than 0.14 per cent. of pure Calcium Hydroxide.

Average Dose.—4 fluidrachms (15 mils).

This solution should be clear when dispensed, as unfortunate results have occurred from patients using a preparation containing an excess of the calcium salt and ignorantly shaking the preparation before using.

SYRUPUS CALCII LACTOPHOSPHATIS. Eng., Syrup of Calcium Lactophosphate.

Average Dose.—2½ fluidrachms (10 mils).

Therapeutic Action.—Prepared Chalk, Precipitated Calcium Carbonate and Lime Water are antacid and mildly astringent. Chlorinated Lime is antiseptic and disinfectant. Calcium Chloride and Lactate are classed as resolvents and hemostatics.

Uses.—The precipitated carbonate is used for hyperchlorhydria, gastric ulcer, etc. Prepared chalk is used in combination with other agents in dusting powders or ointments in the treatment of eczema, dermatitis, ulcers, etc. Its preparations are used for diarrhea, dysentery and other gastro-intestinal conditions. Lime Water is extensively employed in the artificial feeding of infants and the milk diet of adults; also as a spray for diphtheria,

etc. Lime Liniment is employed for burns. Calcium chloride and lactate are used for hemorrhages, particularly purpura hæmorrhagica, scurvy, etc. Recommended for chronic bronchitis and asthma.

Administration.—*Internally.*—In solution, Calcium Chloride or Lactate, or Calcium Hydroxide in the form of Lime Water, are the preparations ordinarily prescribed. They are usually prescribed alone.

To increase the coagulability of the blood, as in the treatment of purpura:

℞		or
Calcii Chloridi	3j	4
Aquæ Dest.	q. s. f℥ij	60

M.
Sig.—Tablespoonful in water every two hours if necessary.

Lime Water is largely used in the artificial feeding of infants. Patients should be cautioned that a clear solution is necessary and that they should not shake the bottle before using, as it might disturb a sediment. It may be ordered as:

℞		or
Liquoris Calcis	Oj	480

Sig.—Lime water.

Prepared Chalk in powders or suspension is largely used, particularly in intestinal disturbances. It is prescribed either alone or with other agents. The following will illustrate:

In the treatment of dysentery:

℞[1]		or
Phenylis Salicyl., Bismuthi Subnit., Cretæ Præp.	āā. 3j	4

M. ft. cht. no. xij.
Sig.—One every two hours.

In the treatment of catarrhal enteritis of childhood:

℞[2]		or
Tinct. Opii Deodorati	♏xvj	1
Bismuthi Subnitratis	gr. lxxx	5
Misturæ Cretæ	q. s. f℥ij	60

M.
Sig.—Teaspoonful every two hours. (Shake-label.)

[1] Shoemaker: Materia Medica and Therapeutics.
[2] Hughes: Practice of Medicine.

In the treatment of enteric troubles of childhood:

℞		or
Bismuthi Subnit.	ʒij	8
Misturæ Cretæ	q. s. fʒij	60

M.

Sig.—Teaspoonful every three hours until relieved. (Shake-label.)

In the treatment of enterocolitis:

℞[1]		or
Bismuthi Subnit.	ʒiij	12
Tinct. Kino,		
Tinct. Opii Camph.	āā. fʒiss	45
Misturæ Cretæ	q. s. fʒvj	180

M.

Sig.—Tablespoonful every three hours. (Shake-label.)

Calcium Carbonate and Phosphate are frequently employed internally in dry form.

In the treatment of hyperacidity:

℞		or
Magnesii Oxidi	ʒiv	15|0
Calcii Carb. Præc.,	ʒiij	12|0
Bismuthi Subnit.	āā. ʒiij	12|0
Ol. Menth. Pip.	♏v	|3

M.

Sig.—Level teaspoonful in glass of milk two hours after meals.

This may be ordered in twenty powders and the directions made to read "One in glass of milk two hours after meals."

Externally.—Lime Liniment is an old-time remedy for burns. It is usually prescribed alone or with a small amount of Phenol.

℞		or
Phenolis Liquefacti	♏xv	1
Linimenti Calcis	q. s. fʒvj	180

M.

Sig.—Apply to burn as directed. (Shake-label.)

Some prescribers prefer to order lime water and olive oil in equal parts, and for some reasons it would seem more desirable.

Calcium Carbonate and Phosphate and Prepared Chalk are sometimes used externally.

[1] Hughes: Practice of Medicine.

In the treatment of erythema venenatum:

℞[1]		or	
Acidi Borici	gr. xv	1	0
Talci Purificati	gr. xx	1	3
Cretæ Præp.	3iv	15	0
Magnesii Carbonatis	3iij	12	0

M.

Sig.—Use as a dusting powder.

In the treatment of scabies:

℞[2]		or	
Sulphuris Loti,			
Olei Cadini,			
Cretæ Præp.	āā. 3ij	8	
Saponis Mollis	3v	19	
Adipis	q. s. 5ij	60	

M.

Sig.—Rub in thoroughly.

CALUMBA.

Latin, Calumba (Gen., Calumbæ). Eng., Calumba. Synonyms, Calumbo, Columbo, Colombo. The dried root of *Jateorhiza palmata.*

Average Dose.—30 grains (2 Gm.).

Official Preparation.

Tinctura Calumbæ. Eng., Tincture of Calumba. Represents 20 per cent. of the drug.

Average Dose.—1 fluidrachm (4 mils).

Therapeutic Action.—Bitter tonic.

Uses.—Principally used as a vehicle for tonic preparations.

Administration.—The tincture is used almost exclusively and is usually prescribed with such agents as nux vomica.

CAMBOGIA.

Latin, Cambogia (Gen., Cambogiæ). Eng., Gamboge. A gum-resin obtained from *Garcinia Hanburii.*

Average Dose.—2 grains (0.125 Gm.).

Gamboge is contained in Compound Cathartic Pills.

Therapeutic Action.—Cathartic.

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[1] Ohmann-Dumesnil: Diseases of the Skin.

[2] *Ibid.*

Uses.—Employed in combination when an active purgative of the drastic and hydragogue type is indicated.

Administration.—It is seldom used except in the compound cathartic pill.

CAMPHORA.

Latin, Camphora (Gen., Camphoræ). Eng., Camphor. Synonym, Gum Camphor. Formula, $C_{10}H_{16}O$. A ketone obtained from *Cinnamomum Camphora.*

Form.—White, translucent masses.

Odor and Taste.—Characteristic pleasant odor, and a pungent, aromatic taste.

Solubility.—Sparingly soluble in water. Readily soluble in alcohol.

Incompatibles.—Will liquefy when rubbed with hydrated chloral, menthol, phenol, thymol, etc. Camphor Water is incompatible with strong solutions of salts.

Average Dose.—By mouth, 3 grains (0.2 Gm.); hypodermic, 1½ grains (0.1 Gm.).

Official Preparations.

Aqua Camphoræ. Eng., Camphor Water. A saturated aqueous solution of Camphor.

Average Dose.—2½ fluidrachms (10 mils).

Linimentum Camphoræ. Eng., Camphor Liniment. Synonym, Camphorated Oil. Camphor, 200 Gm.; Cotton Seed Oil, 800 Gm.

Spiritus Camphoræ. Eng., Spirit of Camphor. Synonym, Tincture of Camphor. Camphor, 100 Gm.; Alcohol, to make 1000 mils.

Average Dose.—15 minims (1 mil).

Camphor is contained in some other preparations, as Linimentum Saponis, Tinctura Opii Camphorata, etc.

CAMPHORA MONOBROMATA (Gen., Camphoræ Monobromatæ). Eng., Monobromated Camphor.

Form.—Colorless needles, scales, or powder.

Odor and Taste.—A mild but characteristic camphoraceous odor and taste.

Solubility.—Almost insoluble in water. Soluble in 6.5 parts of alcohol.

Average Dose.—2 grains (0.125 Gm.).

Therapeutic Action.—Carminative, stimulant, diaphoretic, antiseptic. Monobromated camphor is also esteemed as a nerve sedative and anaphrodisiac.

Uses.—Camphor is used as a stimulant in collapse, narcotic poisoning, etc. Camphor and monobromated camphor are em-

ployed in the treatment of colds, bronchitis. pneumonia, headache, diarrhea, hysteria, and kindred conditions. Externally camphor is used for dermatitis, pruritus, neuralgia, etc.

Administration.—Camphor is sometimes used hypodermatically, and the form of choice is camphor dissolved in sterile oil. The aseptic packages put out by the pharmaceutical manufacturers are the most desirable.

Camphor is frequently prescribed in dry form in capsules with other agents.

In the treatment of coryza:

℞[1]		or
Ext. Belladon. Fol.	gr. ss	03
Camphoræ	gr. vj	40
Quininæ Sulph.,		
Pulv. Ipecac. et Opii	āā. gr. xij	80

M. ft. cap. no. xij.

Sig.—One every half-hour for four hours, then one every three hours.

In the treatment of influenza:

℞[2]		or
Caffeinæ Citratæ	gr. x	65
Camphoræ	gr. x	65
Acetphenetidini	gr. xxx	2 00

M. ft. cap. no. x.

Sig.—One every two hours.

Camphor Water is a frequently employed vehicle.

Camphor is frequently used locally in solution or liquefied.

As an inhalation in coryza:

℞		or
Camphoræ,		
Mentholis	āā. ʒss	2
Tinct. Benzoini Co.	q. s. fʒj	30

M.

Sig.—Use teaspoonful to pitcher of hot water every four hours.

As a spray in coryza, laryngitis, etc.:

℞		or
Camphoræ	gr. vj	4
Eucalyptolis,		
Ol. Menth. Pip.,		
Olei Pini Syl.	āā. ♏vj	4
Petrolati Liq.	q. s. fʒvj	180 0

M.

Sig.—Use as a spray every four hours.

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[1] Musser and Kelly: Practical Treatment.

[2] Hughes: Practice of Medicine.

Patients should be instructed to inhale while using spray.
The following liquefies when triturated:

In the treatment of neuralgia:

℞[1]		or
Chlorali Hydrati,		
Camphoræ,		
Mentholis	āā. ʒj	4

M. et tere bene.
Sig.—Paint over parts as directed.

Some combinations in ointments are as follows:

In the treatment of pruritus:

℞[2]		or
Mentholis,		
Camphoræ,		
Chlorali Hydrati	āā. gr. v	32
Petrolati	q. s. ℥ss	15|00

M.
Sig.—Apply locally.

As an application in pruritic diseases of the skin:

℞[3]		or
Phenolis	gr. v	32
Camphoræ	gr. x	65
Sulphuris Subl.	gr. xxx	2|00
Ung. Zinci Oxidi	q. s. ʒj	30|00

M.
Sig.—Apply frequently to irritable surface.

In the treatment of dermatitis calorica:

℞[4]		or
Phenolis,		
Camphoræ	āā. ʒss	2
Adipis Lanæ Hyd.	ʒj	30
Ung. Aquæ Rosæ	q. s. ʒij	60

M.
Sig.—Apply on cloth every four hours.

In the treatment of eczema of the scrotum:

℞[5]		or
Camphoræ,		
Chlorali Hydrati	āā. gr. xx	1|3
Adipis Lanæ Hyd.	℥ss	15'0
Ung. Aquæ Rosæ	q. s. ʒj	30'0

M.
Sig.—Apply liberally several times daily.

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[1] Hughes: Practice of Medicine.
[2] *Ibid.*
[3] Shoemaker: Materia Medica and Therapeutics|
[4] Ohmann-Dumesnil: Diseases of the Skin.
[5] *Ibid.*

Camphor Liniment may be ordered as in the following for bronchitis in children:

℞		or
Linimenti Camphoræ	fℨij	60

Sig.—Warm and apply to chest as directed.

Monobromated Camphor is usually prescribed in capsules with other agents.

In the treatment of cold, influenza, etc.:

℞		or
Camphoræ Monobrom.,		
Quininæ Hydrobrom. .....āā	gr. xv	1
Acidi Acetylsalicyl.	gr. xxx	2

M. ft. cap. no. xij.

Sig.—One every hour till four (4) are taken.

The others may be ordered to be taken as one every four hours.

This is particularly used in connection with hot drinks, foot-baths, etc, to abort a "cold."

The following has been recommended in headache:

℞[1]		or
Acetanilidi	gr. lxxij	4 50
Caffeinæ Citratæ,		
Camphoræ Monobromatæ .....āā.	gr. xij	75
Sodii Bicarbonatis	gr. xlviij	3 00

M. ft. cap. no. xxiv.

Sig.—One every half-hour until four (4) are taken.

In the treatment of migraine:

℞[2]		or
Caffeinæ Citratæ	gr. v	32
Camphoræ Monobromatæ	gr. xx	1 30
Acetphenetidini	gr. xx	1 30

M. ft. cap. no. x.

Sig.—One every two hours until relieved.

CANNABIS.

Latin, Cannabis (Gen., Cannabis). Eng., Cannabis. Synonyms, Cannabis Indica (U. S. P., viii), Indian Cannabis, Indian Hemp. Dried flowering tops of the pistillate plant of *Cannabis sativa* or of the variety indica.

Average Dose.—1 grain (0.065 Gm.).

[1] Musser and Kelly: Practical Treatment.
[2] Hughes: Practice of Medicine.

Official Preparations.

Extractum Cannabis. Eng., Extract of Cannabis. A soft solid about five times the strength of the crude drug.

Average Dose.—⅛ grain (0.01 Gm.).

Fluidextractum Cannabis. Eng., Fluidextract of Cannabis.

Average Dose.—1½ minims (0.1 mil).

Tinctura Cannabis. Eng., Tincture of Cannabis. Represents 10 per cent. of the drug in alcohol.

Average Dose.—12 minims (0.75 mil).

Cannabis is considered by some as very uncertain in its action and many prescribers will not employ it.

Therapeutic Action.—Sedative, anodyne, narcotic.

Uses.—For headache, neuralgia and kindred conditions. It is an ingredient in many of the corn remedies.

Administration.—*Internally.*—The tincture is the preparation usually employed.

It may be prescribed alone, as:

℞		or
Tinct. Cannabis	f℥j	4
Tinct. Aurantii Dulc.	q. s. f℥j	30

M.

Sig.—Teaspoonful in water every four hours.

Some prescribe the tincture alone by drops and increase to effect. About two drops must be allowed for each minim.

℞		or
Tincturæ Cannabis	f℥j	30

Sig.—Begin with 10 drops three times a day.

It is sometimes used with other agents. The following will illustrate:

In a hypnotic preparation:

℞		or
Chlorali Hydrati	℥j	4
Sodii Bromidi	℥ij	8
Tinct. Cannabis	f℥j	4
Elix. Aromatici	q. s. f℥j	30

M.

Sig.—Teaspoonful in water every four hours when necessary.

Externally.—The extract is sometimes used in combination with other agents. The following will illustrate:

In the treatment of clavus:

℞[1]		or
Acidi Salicylici	gr. xxx	2|0
Ext. Cannabis	gr. x	|6
Collodii Flex.	q. s. f℥ss	15|0

M.

Sig.—Apply to lesions twice daily.

In employing the above many add Ol. Ricini, f℥j.

CANTHARIS.

Latin, Cantharis (Gen., Cantharidis). Eng., Cantharides. Synonym, Spanish Flies. The dried beetles *Cantharis vesicatoria.*

Official Preparations.

Ceratum Cantharidis. Eng., Cantharides Cerate. Contains 35 per cent. of the drug.

Collodium Cantharidatum. Eng., Cantharidal Collodion. Represents 60 per cent. of the drug.

Emplastrum Cantharidis. Eng., Cantharides Plaster. Cantharides Cerate and Resin Plaster spread on fabric. Each square centimeter of spread plaster contains 0.1 Gm. of Cantharides Cerate.

Tinctura Cantharidis. Eng., Tincture of Cantharides. Represents 10 per cent. of the drug.

Average Dose.—1½ minims (0.1 mil).

Therapeutic Action.—Rubefacient, vesicant, and also classed as a diuretic and aphrodisiac, though not used as such.

Uses.—Sometimes used as a counter-irritant as in the treatment of neuralgia, sciatica, or related conditions. Used in hair preparations to stop loss of hair.

Administration.—Cantharides is seldom prescribed. The Cerate or Collodion is sometimes ordered for external use to produce counter-irritation.

The tincture is employed with other agents in applications to the scalp. Internally it is almost unemployed.

CAPSICUM.

Latin, Capsicum (Gen., Capsici). Eng., Capsicum. Synonyms, Cayenne Pepper, African Pepper, Red Pepper. The dried ripe fruit of *Capsicum frutescens.*

Average Dose.—1 grain (0.06 Gm.).

[1] Stelwagon: Diseases of the Skin.

Official Preparations.

Emplastrum Capsici. Eng., Capsicum Plaster. Oleoresin of Capsicum spread in a thin coating over adhesive plaster.

Oleoresina Capsici. Eng., Oleoresin of Capsicum.

Average Dose.—½ grain (0.03 Gm.).

Tinctura Capsici. Eng., Tincture of Capsicum. Represents 10 per cent. of the drug.

Average Dose.—8 minims (0.5 mil).

Therapeutic Action.—Rubefacient, vesicant, stimulant, stomachic.

Uses.—Alcoholism, indigestion, certain forms of nephritis, etc.

Administration.—Capsicum is not often prescribed. The most frequent employment is that of the powdered drug or the tincture with other agents:

In a laxative preparation for tuberculosis:

℞[1]	or
Mas. Hydrargyri, Aloes Pulv., Ipecacuanhæ Pulv., Capsici Pulv. .....āā. gr. xij M. ft. cap. no. xxiv. Sig.—One at night.	8

CARBO LIGNI.

Latin, Carbo Ligni. Eng., Wood Charcoal. Synonym, Charcoal. Charcoal prepared from soft wood and finely powdered. A black, odorless, tasteless and insoluble powder.

Average Dose.—15 grains (1 Gm.).

Therapeutic Action.—Absorbent.

Uses.—Employed in testing intestinal activity and sometimes prescribed for certain forms of dyspepsia. Its medicinal value is questionable.

Administration.—Charcoal is sometimes employed internally alone or with other agents. It is usually administered in capsules. Not over 5 grains should be ordered to each capsule.

CARDAMOMI SEMEN.

Latin, Cardamomi Semen. Eng., Cardamom Seed (Cardamomum, U. S. P., viii). The dried seeds of *Elettaria Cardamomum.*

Average Dose.—15 grains (1 Gm.).

[1] Musser and Kelly: Practical Treatment.

Official Preparations.

Tinctura Cardamomi. Eng., Tincture of Cardamom. Represents 15 per cent. of the drug.

Average Dose.—30 minims (2 mils).

Tinctura Cardamomi Composita. Eng., Compound Tincture of Cardamom. Cardamom seed, 20 Gm.; Saigon Cinnamon, 25 Gm.; Caraway, 12 Gm.; Cochineal, 5 Gm.; Glycerin, 50 mils; Diluted Alcohol, to make 1000 mils.

Average Dose.—1 fluidrachm (4 mils).

Therapeutic Action.—Stomachic, carminative.

Uses.—In flatulent colic, loss of appetite, etc. A vehicle and flavoring agent.

Administration.—Usually prescribed as a vehicle and adjuvant for more active agents. The compound tincture is the preparation of choice.

In the treatment of constipation:

℞[1]		or
Flext. Cascaræ Sag.	f℥j	30
Tinct. Cardamomi Comp.	f℥ss	15
Glycerini	f℥j	30
Aquæ Menth. Pip. q. s.	f℥iij	90

M.

Sig.—Teaspoonful in water after meals.

In the treatment of acne:

℞[2]		or
Sodii Benzoatis	℥ij	8
Tinct. Nucis Vomicæ	f℥ij	8
Flext. Cascaræ Sag.	f℥ss	15
Tinct. Cardamomi Comp. q. s.	f℥iij	90

M.

Sig.—Teaspoonful in water after meals.

As a laxative in the treatment of acne:

℞[3]		or
Flext. Cascaræ Sag.,		
Tinct. Nucis Vomicæ āā.	f℥iij	12
Tinct. Cardamomi Comp. q. s.	f℥iij	90

M.

Sig.—Teaspoonful in water before meals.

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[1] Hughes: Practice of Medicine.

[2] *Ibid.*

[3] Stelwagon: Diseases of the Skin.

CARUM.

Latin, Carum. Eng., Caraway. Synonym, Caraway Seed. The dried fruit of *Carum Carvi.*

Average Dose.—15 grains (1 Gm.).

Official Constituent.

Oleum Cari. Eng., Oil of Caraway.
Average Dose.—3 minims (0.2 mil).
Oil of Caraway is contained in the Compound Spirit of Juniper.

Therapeutic Action.—Stomachic, carminative.

Uses.—A domestic remedy for flatulent colic, particularly of infants. Seldom prescribed.

CARYOPHYLLUS.

Latin, Caryophyllus. Eng., Clove. The dried flower-buds of *Eugenia aromatica* or *Jambosa caryophyllus.*

Average Dose.—4 grains (0.25 Gm.).

Official Constituents.

Oleum Caryophylli. Eng., Oil of Clove.
Average Dose.—3 minims (0.2 mil).

Eugenol. Eng., Eugenol. An unsaturated aromatic phenol obtained from Oil of Cloves and other sources.
Average Dose.—3 minims (0.2 mil).
Cloves are contained in some other official preparations.

Therapeutic Action.—Stomachic, carminative, antiseptic, irritant, local analgesic.

Uses.—Employed as a flavoring agent and as an adjuvant to stomachic preparations. The oil is used locally for toothache.

Administration.—Seldom used in medicine, except the oil, which is extensively employed by dentists.

CASCARA SAGRADA.

Latin, Cascara Sagrada. Eng., Cascara Sagrada. Synonyms, Cascara, Rhamnus Purshiana (U. S. P., viii). The dried bark of *Rhamnus Purshiana.*

Average Dose.—15 grains (1 Gm.).

Official Preparations.

Extractum Cascaræ Sagradæ. Eng., Extract of Cascara Sagrada.
Form.—A dark-colored powder.
Average Dose.—4 grains (0.25 Gm.).

Fluidextractum Cascaræ Sagradæ. Eng., Fluidextract of Cascara Sagrada.

Average Dose.—15 minims (1 mil).

Fluidextractum Cascaræ Sagradæ Aromaticum. Eng., Aromatic Fluidextract of Cascara Sagrada.

Average Dose.—30 minims (2 mils).

Therapeutic Action.—Purgative, stomachic, tonic.

Uses.—Extensively used alone or in combination with other agents to produce purgation. Particularly serviceable in the treatment of chronic constipation.

Administration.—All three of these preparations are extensively used. The fluidextract and the aromatic fluidextract are more commonly employed alone and administered three times a day, particularly when the effort is to correct a chronic constipation. The dose may often be gradually decreased until the drug is entirely discontinued, while the improved physical condition continues.

The simple fluidextract is very bitter, so given three times a day it exercises a tonic effect aside from its laxative action. The aromatic fluidextract is supposed to represent the same strength of the drug, but many prescribers claim that its purgative action is decidedly less than that of the other preparation. The aromatic fluidextract is miscible with water, the plain fluidextract is not. The U. S. P. average dose is frequently exceeded, particularly when the fluidextracts are ordered alone.

The extract is seldom ordered alone, but is frequently used with other agents. It is preferably administered in capsules. The crude drug is seldom if ever prescribed.

As a tonic and laxative:

℞		or
Flext. Cascaræ Sagr.	f℥j	30
Glycerini,		
Elix. Aromatici	āā. f℥ss	15

M.

Sig.—Teaspoonful after meals.

Or:

℞		or
Flext. Cascaræ Sagr. Arom.,		
Glycerini	āā. f℥ss	15
Ext. Malti	q. s. f℥ij	60

M.

Sig.—Teaspoonful after meals.

Or:

℞		or
Flext. Cascaræ Sagr. Arom.	f℥j	30

Sig.—Teaspoonful at bedtime.

As a laxative in the treatment of acne:

℞[1]		or
Flext. Cascaræ Sagr.,		
Tinct. Nucis Vomicæ	āā f℥iij	12
Tinct. Cardamomi Comp.	q. s. f℥iij	90

M.

Sig.—Teaspoonful in water before meals.

In capsules in combination with other purgatives:

℞		or
Atropinæ Sulph.*	gr. 1/100	0006
Strychninæ Sulph.	gr. 1/30	0002
Hydrarg. Chlor. Mitis	gr. v	3200
Ext. Cascaræ Sagr.	gr. vj	4000

M. ft. cap. no. ij.

Sig.—Take an hour apart.

In the treatment of constipation:

℞[2]		or
Ext. Belladon. Fol.	gr. ij	13
Resinæ Podophylli	gr. ij	13
Ext. Nucis Vomicæ	gr. v	32
Ext. Cascaræ Sagr.	gr. xl	2 50

M. ft. cap. no. xx.

Sig.—One at bedtime.

CATECHU.

(Not Official.)

Latin, Catechu (Gen., Catechu). Eng., Catechu. An extract prepared from the wood of *Acacia catechu.*

The U. S. P. of 1900 dropped Catechu and adopted Gambir in its place, owing to the greater uniformity of the latter.

Therapeutic Action.—Astringent.

Uses.—Principally in the treatment of diarrhea.

Administration.—Catechu in the form of the tincture is still prescribed by the profession.

[1] Stelwagon: Diseases of the Skin.

[2] Ashton: Practice of Gynecology.

In the treatment of gonorrhea:

℞[1]		or	
Zinci Sulphatis	gr. xv	1	0
Plumbi Acetatis	gr. xx	1	3
Tincturæ Opii,			
Tincturæ Catechu .....āā.	fʒij	2	0
Aquæ .....q. s.	fʒvj	180	0

M.

Sig.—Inject after urination. (Shake-label.)

CERATA—Cerates.

Cerates are unctuous substances of such consistency that they may be easily spread, at ordinary temperature, upon muslin, or similar material, with a spatula, and yet not so soft as to liquefy and run when applied to the skin. They are not often prescribed. The following three cerates are official:—

Ceratum.—See Cera Flava.

Ceratum Cantharidis.—See Cantharis.

Ceratum Resinæ.—See Terebinthina.

CERA FLAVA.

Latin, Cera Flava. Eng., Yellow Wax. A solid substance prepared from the honeycomb of the bee, *Apis mellifera.*

Official Preparations.

Cera Alba. Eng., White Wax. Yellow wax bleached.

Ceratum. Eng., Cerate. White Wax, 300 Gm.; Benzoinated Lard, 700 Gm.

Wax is a constituent of all the official cerates except one.

CERII OXALAS.

Latin, Cerii Oxalas (Gen., Cerii Oxalatis). Eng., Cerium Oxalate. A mixture of the oxalates of cerium and other associated elements.

Form.—A white or nearly white powder.

Odor and Taste.—Odorless and tasteless.

Solubility.—Insoluble in water or alcohol.

Average Dose.—3 grains (0.2 Gm.).

Therapeutic Action.—Antiemetic.

[1] White and Martin: Genito-urinary and Venereal Diseases.

Uses.—Principally used in the treatment of nausea and vomiting, particularly that of pregnancy. Recommended for certain forms of diarrhea.

Administration.—This is used in dry form or suspended in a liquid, either alone or, more frequently, with other agents.

The above dose of the U. S. P. is often exceeded.

Some combinations are illustrated in the following:

In the treatment of postanesthetic vomiting:

℞[1]		or
Cocainæ Hydrochlor.	gr. j	065
Acetanilidi	gr. x	650
Cerii Oxalatis	gr. xx	1|300

M. ft. cht. no. iv.

Sig.—One every two hours when indicated.

In suspension in the treatment of nausea:

℞		or
Cocainæ Hydrochlor.	gr. j	065
Cerii Oxalatis	3ss	2|000
Bismuthi Subnit.	3j	4|000
Syr. Acaciæ	f℥j	30|000
Aquæ	q. s. f℥iij	90|000

M.

Sig.—Tablespoonful every hour till relieved. (Shake-label.)

CETACEUM.

Latin, Cetaceum. Eng., Spermaceti. A concrete, fatty substance, obtained from the head of sperm whale, *Physeter macrocephalus.*

CHLORALUM HYDRATUM.

Latin, Chloralum Hydratum (Gen., Chlorali Hydrati). Eng., Hydrated Chloral. Synonyms, Chloral, Chloral Hydrate. Formula, $C_2HCl_3O + H_2O$.

Form.—Colorless crystals.

Odor and Taste.—An aromatic, penetrating odor and somewhat bitter taste.

Solubility.—Freely soluble in water. Soluble in alcohol, but decomposed by strong alcoholic solutions.

[1] Ashton: Practice of Gynecology.

Incompatibles.—Alcohol, alkalies, borates, potassium iodide and permanganate, etc. It liquefies when rubbed with camphor, phenol, menthol, thymol, etc.

Average Dose.—8 grains (0.5 Gm.).

Therapeutic Action.—Hypnotic,* analgesic, antispasmodic, antiseptic.

Uses.—Used for insomnia, particularly when the result of nervous excitement. Employed in the treatment of convulsions, as those of strychnine poisoning, tetanus, etc., and for the convulsions of childhood. Frequently used in the management of labor.

Toxicology.—Acute poisoning with hydrated chloral is usually characterized by coma, lowered blood-pressure, impaired respiration, lowered temperature, dilated pupils and abolished reflexes. Treatment.—The stomach should be washed out, the patient kept warm, and stimulants, as caffeine, strychnine, atropine and camphor, used. Artificial respiration, if necessary.

Administration.—Hydrated Chloral cannot be prescribed in dry form, but is used in solution or ointment.

Internally.—Used in aqueous solution either alone or with other agents, as the bromides. It is administered either by mouth or by rectum.

Some combinations are shown by the following:

In the treatment of convulsions of childhood:

℞[1]		or	
Chlorali Hydrati	gr. viij		5
Sodii Bromidi	gr. xvj		10
Syrupi Aurantii	q. s. f℥ij		60

M.

Sig.—Teaspoonful. Repeat in one hour if necessary.

In the treatment of acute laryngitis:

℞[2]		or
Chlorali Hydrati	gr. lxxv	5
Ammonii Bromidi	gr. xxx	2
Potassii Bromidi	gr. xlv	3
Aquæ Cinnamomi	q. s. f℥ij	60

M.

Sig.—Teaspoonful in water every twenty minutes until improvement takes place.

[1] Ruhrah: Diseases of Children.

[2] Musser and Kelly: Practical Treatment.

Externally.—Some combinations are shown by the following:

In the treatment of eczema of the scrotum:

℞		or	
Camphoræ,			
Chlorali Hydrati	āā gr. xx	1	3
Adipis Lanæ Hyd.	℥ss	15	0
Ung. Aquæ Rosæ	q. s. ℥j	30	0
M.			
Sig.—Apply liberally several times daily.			

In the treatment of pruritus:

℞[1]		or	
Mentholis,			
Camphoræ,			
Chlorali Hydrati	āā. gr. v		32
M. et adde			
Petrolati	q. s. ℥ss	15	00
Sig.—Apply locally.			

In the treatment of pruritus:

℞[2]		or	
Chlorali Hydrati	℥j	4	
Petrolati	q. s. ℥j	30	
M.			
Sig.—Apply locally.			

The following liquefies when triturated:

In the treatment of neuralgia:

℞[3]		or	
Chlorali Hydrati,			
Camphoræ,			
Mentholis	āā. ℥j	4	
M. et tere bene.			
Sig.—Paint over parts as directed.			

CHLOROFORMUM.

Latin, Chloroformum (Gen., Chloroformi). Eng., Chloroform. Formula, $CHCl_3$.

Form.—A heavy, colorless liquid.

Odor and Taste.—Characteristic odor and burning, sweetish taste.

Solubility.—In about 210 volumes of water and in all proportions in alcohol.

Average Dose.—5 minims (0.3 mil).

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[1] Hughes: Practice of Medicine.
[2] Ashton: Practice of Gynecology.
[3] Hughes: Practice of Medicine.

Official Preparations.

Aqua Chloroformi. Eng., Chloroform Water. A saturated, aqueous solution containing about 0.5 per cent. of Chloroform.

Average Dose.—4 fluidrachms (15 mils).

Linimentum Chloroformi. Eng., Chloroform Liniment. Chloroform, 300 mils; Soap Liniment, 700 mils.

Spiritus Chloroformi. Eng., Spirit of Chloroform. Chloroform, 60 mils; Alcohol, 940 mils.

Average Dose.—30 minims (2 mils).

Therapeutic Action.—General anesthetic, sedative, antispasmodic, anodyne, carminative, rubefacient.

Uses.—By inhalation, extensively used as a general anesthetic, though not considered as safe as ether. By mouth, it is used in the treatment of acute indigestion, dysentery, diarrhea, and various abdominal pains; also for the cough of bronchitis and kindred conditions. Externally it is an ingredient of liniments for sprains, rheumatism, etc.

Administration.—*Internally.*—Chloroform Water is sometimes used as a vehicle in the administration of sedatives, carminatives, etc.

Spirit of Chloroform is used alone or with other agents.

Some combinations for internal use are shown in the following:

In the treatment of acute bronchitis:

℞[1]		or
Terebeni	f℥ij	8
Creosoti	f℥ss	2
Acaciæ	q. s.	
Aquæ Chloroformi	q. s. f℥iij	90

M. ft. emulsion.

Sig.—Teaspoonful with water every four hours.

In the treatment of an acute exacerbation of a dry chronic bronchitis:

℞[2]		or
Ammonii Chloridi	℥ij	8
Tinct. Hyoscyami,		
Syr. Scillæ Comp.	āā. f℥iv	15
Aquæ Chloroformi	q. s. f℥iij	90

M.

Sig.—Teaspoonful in water every three hours.

[1] Hughes: Practice of Medicine.

[2] *Ibid.*

In the treatment of acute intestinal indigestion:

℞[1]		or	
Naphthaleni	gr. xxx	2	00
Bismuthi Subsalicyl.	gr. lxxx	5	00
Phenolis	gr. iv		32
Glycerini	f℥j	30	00
Aquæ Chloroformi q. s.	f℥iij	90	00

M.

Sig.—Two (2) teaspoonfuls in water every two hours. (Shake-label.)

In a preparation for indigestion:

℞[2]		or	
Pepsini	℥j	4	00
Acidi Hydrochlor. Dil.	f℥iv	15	00
Strychninæ Sulph.	gr. ss		03
Glycerini	f℥ss	15	00
Aquæ Chloroformi q. s.	f℥iij	90	00

M.

Sig.—Teaspoonful in water after meals.

In the treatment of cough:

℞		or	
Spir. Chloroformi,			
Tinct. Opii Camph. āā.	f℥ij	8	
Elix. Aromatici q. s.	f℥ij	60	

M.

Sig.—Teaspoonful in water every two hours. (Shake-label.)

In the treatment of "cramp colic," acute indigestion, etc.

℞		or	
Spir. Chloroformi,			
Spir. Menth. Pip. āā.	f℥ss	15	

M.

Sig.—Teaspoonful in water every two hours till relieved.

In the treatment of tapeworm:

℞		or	
Oleoresinæ Aspidii	f℥j	4	
Chloroformi	♏xv	1	00
Olei Tiglii	♏iv		25
Glycerini q. s.	f℥ij	60	00

M.

Sig.—Take half at 8 A.M., the rest in an hour if needed. (Shake-label.)

[1] Hughes: Practice of Medicine.

[2] *Ibid.*

Externally.—The official Chloroform Liniment is used alone or with other agents, or chloroform is prescribed with Soap Liniment in other proportions. Decided rubefacient action is effected by covering after applying.

Some illustrations are shown in the following:

Externally Chloroform may be ordered as:

℞		or
Lin. Chloroformi	f℥vj	180

Sig.—Apply with massage as directed.

Or:

℞		or
Mentholis	3j	4
Chloroformi	f℥j	30
Lin. Saponis	q. s. f℥vj	180

M.

Sig.—Apply with massage as directed.

In the treatment of neuralgia (to be applied with friction along the course of the affected nerve):

℞[1]		or
Tinct. Aconiti, Chloroformi	āā. f℥j	30
Lin. Saponis	q. s. f℥vj	120

M.

Sig.—Apply as directed. (Poison-label.)

CHONDRUS.

Latin, Chondrus. Eng., Chondrus. Synonyms, Irish Moss, Carrageen. The dried plant of *Chondrus crispus* or of *Gigartina mamillosa.*

Average dose.—In decoction, 4 drachms (15 Gm.).

Therapeutic Action.—Demulcent, nutrient.

Uses.—Seldom employed. Recommended for diarrhea, dysentery, inflammations of the genito-urinary tract and some skin diseases.

Administration.—May be employed in the form of a mucilage.

CHROMII TRIOXIDUM.

Latin, Chromii Trioxidum (Gen., Chromii Trioxidi). Eng., Chromium Trioxide. Synonym, Chromic Acid. Small crystals or prisms of a dark purplish-red color. Very soluble in water.

[1] Shoemaker: Materia Medica and Therapeutics.

Therapeutic Action.—Caustic.

Uses.—Sometimes used in the treatment of warts, etc.

Administration.—it is used either in the pure state or in aqueous solution.

CHRYSAROBINUM.

Latin, Chrysarobinum (Gen., Chrysarobini). Eng., Chrysarobin. A neutral principle extracted from Goa powder.

Form.—A pale orange-yellow powder.

Odor and Taste.—Odorless and tasteless.

Solubility.—Very slightly soluble in water. Soluble in 85 parts of alcohol.

Average Dose.—½ grain (0.03 Gm.).

Official Preparations.

Unguentum Chrysarobini. Eng., Chrysarobin Ointment. Chrysarobin, 6 Gm.; Benzoinated Lard, 94 Gm.

Therapeutic Action.—Antiparasitic.

Uses.—Principally in the treatment of skin diseases, as ringworm, psoriasis, etc.

Administration.—*Internally.*—Seldom used.

Externally.—It should be used with caution as it is a powerful irritant and is liable to cause dermatitis, and on the face, edema, also. It stains the skin a yellowish-brown. Some combinations are shown in the following:

In the treatment of tinea barbæ:

℞[1]		or	
Chrysarobini	ʒss	2	
Adipis Lanæ Hyd.	℥ss	15	
Ung. Aquæ Rosæ	q. s. ℥j	30	

M.

Sig.—Apply thoroughly to scalp once daily.

In the treatment of psoriasis:

℞[2]		or	
Chrysarobini	ʒj	4	0
Acidi Salicylici	gr. xx	1	3
Ætheris	f℥j	4	0
Olei Ricini	♏x		6
Collodii	q. s. f℥j	30	

M.

Sig.—Paint on affected parts.

[1] Ohmann-Dumesnil: Diseases of the Skin.

[2] Stelwagon: Diseases of the Skin.

CIMICIFUGA.

Latin, Cimicifuga. Eng., Cimicifuga. Synonyms, Black Snakeroot, Black Cohosh. The dried rhizome and roots of *Cimicifuga racemosa.*

Average Dose.—15 grains (1 Gm.).

Official Preparations.

Extractum Cimicifugæ. Eng., Extract of Cimicifuga.
Average Dose.—4 grains (0.25 Gm.).

Fluidextractum Cimicifugæ. Eng., Fluidextract of Cimicifuga.
Average Dose.—15 minims (1 mil).

Therapeutic Action.—Has been classed as a simple bitter, mild cardiac stimulant, alterative and emmenagogue.

Uses.—Has been used for chorea, amenorrhea, dysmenorrhea, and some other conditions.

Administration.—Cimicifuga or its preparations are seldom prescribed as such. The drug is used in some unofficial preparations that are sometimes employed.

CINCHONA.

Latin, Cinchona (Gen., Cinchonæ). Eng., Cinchona. Synonyms, Yellow Cinchona, Peruvian Bark, Jesuits' Bark, etc. The dried bark of *Cinchona Ledgeriana, Cinchona Calisaya,* and of hybrids of these with other species of *Cinchona.*

CINCHONA RUBRA.

Latin, Cinchona Rubra. Eng., Red Cinchona. Synonyms, Peruvian Bark, Jesuits' Bark, etc. The dried bark of *Cinchona succirubra* or of its hybrids.

Constituents of Cinchona and Red Cinchona.

Not less than 5 per cent. of alkaloids, the most important of which is the official Quinine. The cinchonas contain tannic acid.
Average Dose.—15 grains (1 Gm.).

Official Preparations of Cinchona.

Fluidextractum Cinchonæ. Eng., Fluidextract of Cinchona.
Average Dose.—15 minims (1 mil).

Tinctura Cinchonæ. Eng., Tincture of Cinchona. Represents 20 per cent. of Cinchona in glycerin, alcohol and water.
Average Dose.—1 fluidrachm (4 mils).

Official Preparation of Red Cinchona.

Tinctura Cinchonæ Composita. Eng., Compound Tincture of Cinchona. Represents Red Cinchona, 100 Gm.; Bitter Orange Peel, 80 Gm.; Serpentaria, 20 Gm. in glycerin, alcohol and water, to make 1000 mils.

Average Dose.—1 fluidrachm (4 mils).

Official Alkaloids and Salts.
(Obtained from both.)

Quinina. Eng., Quinine.

Average Dose.—Tonic 1½ grains (0.1 Gm.); antimalarial, at least 15 grains (1 Gm.) daily.

Used in many official preparations.

Quininæ Sulphas (Gen., Quininæ Sulphatis). Eng., Quinine Sulphate. Synonym, Quinine.

Odor and Taste.—Odorless and a bitter taste.

Solubility.—In 725 parts of water or 107 parts of alcohol.

Incompatibles.—Ammonia, alkalies, lime-water, tannic acid, Donovan's solution, iodine, iodides, bromides, etc.

Average Dose.—Tonic 1½ grains (0.1 Gm.); antimalarial, at least 15 grains (1 Gm.) daily.

Quininæ Bisulphas (Gen., Quininæ Bisulphatis). Eng., Quinine Bisulphate.

Form, Odor, Taste, Incompatibility and Dose.—Same as Quininæ Sulphas.

Solubility.—In 9 parts of water or 23 parts of alcohol.

Quininæ Dihydrochloridum (Gen., Quininæ Dihydrochloridi). Eng., Quinine Dihydrochloride.

Form, Odor, Taste, Dose.—Same as Quininæ Sulphas.

Solubility.—In 0.6 part of water, or 12 parts of alcohol.

Quininæ et Ureæ Hydrochloridum (Gen., Quininæ et Ureæ Hydrochloridi). Eng., Quinine and Urea Hydrochloride. Synonyms, Quinine and Urea Chloride, Quinine Carbamate.

Form, Odor, Taste.—Same as Quininæ Sulphas.

Solubility.—In 0.9 part of water, or 2.4 parts of alcohol.

Average Dose.—Hypodermic (one dose daily), 15 grains (1 Gm.).

Quininæ Hydrobromidum (Gen. Quininæ Hydrobromidi). Eng., Quinine Hydrobromide.

Form, Odor, Taste, Incompatibility and Dose.—Same as Quininæ Sulphas.

Solubility.—In 40 parts of water or 0.9 part of alcohol.

Quininæ Hydrochloridum (Gen., Quininæ Hydrochloridi). Eng., Quinine Hydrochloride. Synonyms, Quinine Muriate, Quinine Hydrochlorate.

Form, Odor, Taste, Incompatibility and Dose.—Same as Quininæ Sulphas.

Solubility.—In 18 parts of water or 0.8 part of alcohol.

Quininæ Salicylas (Gen., Quininæ Salicylatis). Eng., Quinine Salicylate.

Form, Odor, Taste, Incompatibility and Dose.—Same as Quininæ Sulphas.

Solubility.—In about 77 parts of water or 14 parts of alcohol.

Quininæ Tannas (Gen., Quininæ Tannatis). Eng., Quinine Tannate.
Form.—A pale-yellow or yellowish-white powder.
Odor and Taste.—Odorless and tasteless or not having more than a slightly bitter or astringent taste.
Solubility.—Only slightly soluble in water; somewhat more soluble in alcohol.
Average Dose.—3 grains (0.2 Gm.).

Cinchoninæ Sulphas. Eng., Cinchonine Sulphate.
Form, Odor, Taste, Incompatibility.—Same as Quininæ Sulphas.
Solubility.—In 60 parts of water or 12½ parts of alcohol.
Average Dose.—2½ grains (0.15 Gm.).

Cinchonidinæ Sulphas. Eng., Cinchonidine Sulphate.
Form, Odor, Taste, Incompatibility.—Same as Quininæ Sulphas.
Solubility.—In 65 parts of water or 90 parts of alcohol.
Average Dose.—2½ grains (0.15 Gm.).

Therapeutic Action.—Cinchona and its preparations and official alkaloids are antimalarial, antipyretic, tonic, antiseptic.

Uses.—The preparations of cinchona are used as bitter tonics. The alkaloids other than quinine are seldom employed by the profession.

Quinine—*by the mouth*—is used for malaria, coryza, influenza, bronchitis, pertussis, erysipelas, septicemia, etc.

By Enema.—Injections or irrigations are used for amebic dysentery, pinworms, ulcerated colon, gonorrhea, cystitis, abscesses, etc.

Externally.—For sores, ulcers, scalp diseases.

By Needle.—For malaria and as a local anesthetic.

Cinchonism.—Severe results from taking quinine are very rare, but considerable discomfort is quite common. Many people have such an idiosyncrasy for the drug that even a few grains will occasion alarming symptoms. The usual toxic symptoms are a sense of fullness in the head, dizziness, ringing in the ears, nausea, partial or even total deafness. There may be itching of the skin with or without eruption. The skin may show lesions anywhere from a mild erythema to purpura hemorrhagica. These symptoms may be accompanied with an elevation of temperature. Quinine given during pregnancy may produce an abortion.

Treatment.—The unpleasant symptoms of cinchonism may be in part prevented by associating the bromides with the drug. If very disagreeable symptoms develop, the drug should be discontinued unless there is more demand for its continuance. Sodium or potassium bromide in rather large doses may be given and elimination favored. The cutaneous symptoms may be treated by

starch or bran baths and antipruritic inunctions or applications, if necessary. Hypodermic injections of adrenalin may be of value.

Administration.—*By Mouth.*—The Bark, Fluidextract and Tincture are seldom used. The Compound Tincture is frequently employed, but as it contains only about 0.3 grain total alkaloids to the teaspoonful it has little effect except that due to its bitter taste.

It should be remembered that the tinctures and fluidextract of cinchona contain tannic acid. The use of the Compound Tincture is illustrated in the following prescription, in which case it is said to prevent the unpleasant gastric disturbances that might result from the use of the other agents. The cinchona alkaloids are not precipitated for reasons elsewhere explained.

℞		or	
Hydrarg. Chlor. Corros.	gr. j		065
Potassii Iodidi	ʒiv	15	000
Tinct. Cinchonæ Comp.	fʒij	60	000
Aquæ	q. s. fʒiv	120	000

M.
Sig.—Teaspoonful in water an hour before meals.

Tasteless Administration by Mouth.—The quinine salts in capsules are by far the most desirable form for administration in the vast majority of cases, where the patient is old enough to swallow a capsule. Pills and tablets possess no advantages over capsules and are particularly subject to the disadvantages mentioned under Pills, p. 377, and Tablets, p. 377.

The prescriber should see that the pharmacist dispenses the capsules free from adhering particles.

The salts of choice seem to be Quinine Sulphate, Hydrobromide, and Hydrochloride for general use as an antiperiodic and tonic, and Quinine Hydrobromide and Salicylate for colds, influenza, tonsillitis, etc.

Not more than 5 grains should usually be ordered to the capsule. Some frequently used prescriptions are as follows:

In the treatment of malaria:

℞		or	
Quininæ Hydrobromidi	gr. xc		6

Ft. cap. no. xviij.
Sig.—Take six (6) each day as directed.

Written instructions should be given, based on the time of the expected chill, so that the greatest possible concentration of the

drug may be present in the blood at the time of liberation of the malaria organisms. With this in view, it is certainly necessary to base the size of the dose on the probable amount of blood in the particular patient (size of patient).

The prescription direction may read as

Sig.—One each morning at 6, 7, 8, 9, 10, 11.

For children, see below, and p. 135.

In the treatment of malaria following the first three days of quinine in large doses:

℞		or
Arseni Trioxidi	gr. ij	130
Strychninæ Sulph.	gr. j	065
Quininæ Sulph.,		
Ferri Reducti	āā gr. cl	10 000

M. ft. cap. no. L.

Sig.—One after each meal.

While it is customary to continue the treatment longer than sixteen days, it is usually desirable to order in the above amount, so that the other ingredients may be changed or discontinued, as conditions may indicate.

This may be prescribed for children in the proper doses, put into powders, and directions given that they may be administered in syrup of chocolate. For adults the Massa Ferri Carbonatis is frequently used instead of the Ferrum Reductum.

In the treatment of subinvolution of the uterus:

℞[1]		or
Strychninæ Sulph.	gr. j	065
Ext. Ergotæ,		
Quininæ Sulph.	āā. gr. xxx	2 000

M. ft. cap. no. xxx.

Sig.—One before each meal.

In the treatment of coryza:

℞[2]		or
Ext. Belladon. Fol.	gr. ss	03
Camphoræ	gr. vj	40
Quininæ Sulph.,		
Pulv. Ipecac. et Opii	āā. gr. xij	80

M. ft. cap. no. xij.

Sig.—One every half-hour for four hours, then one every three hours.

[1] Shoemaker: Materia Medica and Therapeutics.

[2] Musser and Kelly: Practical Treatment.

In the treatment of grip, cold, etc.:

℞		or
Caffeinæ Citratæ	gr. x	65
Quininæ Hydrobrom.	gr. xx	1 30
Acidi Acetylsalicyl.	gr. L	3 00

M. ft. cap. no. xvj.
Sig.—One every two hours till eight (8) are taken each day.

In the treatment of chronic heart disease:

℞[1]		or
Digitalis Pulv,		
Quininæ Hydrochlor.	āā. gr. xv	1 0
Ext. Valerianæ	3j	4 0

M. ft. cap. no. xxx.
Sig.—One three times a day.

The principle in preparing a so-called "tasteless" quinine is to use a salt that will dissolve only to the smallest possible extent, so it will not come into contact with the special nerve-endings in such form as to be appreciated. The sulphate is probably the best salt for this purpose. The tannate is less bitter but has to be given in large amounts and at least is slower and more uncertain in action.

It is usually possible to ascertain the preference of the child as to flavor. Glycyrrhiza may be distinctly disagreeable to some, while syrup of chocolate would be very acceptable.

Some adults and practically all small children are unable to swallow capsules. The prescriber should always ascertain as to this matter before writing his prescription. If patient is a child 8 to 10 years of age, but has never been tried on capsules, the prescription may be written for that form and the nurse instructed to empty them and administer in syrup of chocolate if the capsules cannot be swallowed. This method is sometimes desirable, anyway, as, for example, when other agents are ordered with the quinine salt that cannot well be put in solution. To illustrate: The following has been used for a child 6 years old, to follow the customary three days' intensive quinine treatment for malaria:

℞		or
Arseni Trioxidi,		
Strychninæ Sulph.	āā. gr. ⅛	002
Quininæ Sulph.,		
Ferri Reducti	āā. gr. L	3 000

M. ft. cap. no. L.
Sig.—One after meals as directed.

[1] **Musser and Kelly: Practical Treatment.**

A "tasteless" syrup for administration to a child:

℞		or
Quininæ Sulphatis	gr. xvj	1
Syr. Eriodictyi Arom.	q. s. f℥ij	ad 60

M.

Sig.—Five (5) teaspoonfuls each day as directed. (Shake-label.)

Syrup of glycyrrhiza or syrup of chocolate may be ordered as the vehicle in the above.

In the treatment of malaria (child 6 years old):

℞		or
Quininæ Sulphatis	gr. xxx	2

Ft. cht. no. xviij.

Sig.—Six (6) powders in chocolate syrup each day as directed.

Bitter Solutions.—These are frequently desirable for adults and sometimes for children. Some combinations are shown in the following:

As a bitter tonic to follow the intensive treatment of malaria:

℞		or
Quininæ Sulphatis	℥iiss	10
Tinct. Ferri Chlor.	f℥vj	23
Liq. Acidi Arsenosi	f℥ij	8
Aquæ	q. s. f℥vj	180

M.

Sig.—Teaspoonful in water after meals.

℞		or
Quininæ Sulphatis	℥iiss	10
Acidi Sulph. Arom.	f℥ij	8
Elix. Aromatici	q. s. f℥vj	180

M.

Sig.—Teaspoonful in water before meals.

Hypodermic Use.—This method is sometimes employed, particularly when it is desirable to get the patient rapidly under the influence of the drug. Quinine Hydrochloride is sometimes used but Quinine Dihydrochloride is even more desirable for this purpose. It is soluble in less than its own weight of water.

Quinine and Urea Hydrochloride is soluble in its own weight of water, so is a valuable form for hypodermic use. Hypodermic employment is, of course, confined to the physician himself. He may use the tablets and prepare the solutions extemporaneously or order them as follows:

℞		or	
Quininæ Dihydrochlor.	3j		4|0
Aquæ Destillatæ	q. s.	f℥ss	15|0

M.
Sig.—Formula.

Or:

℞		or	
Quin. et Ureæ Hydrochlor.	gr.	xxx	2|00
Aquæ Dest.	q. s.	f3j	4|00

M.
Sig.—Formula.

These solutions should be given largely diluted and even then there is frequently slow absorption, local irritation, and, it is claimed, sometimes even tetanus.

Intravenously.—Considered by many as preferable to the hypodermic method. The solutions, as just stated for hypodermic use, may be employed only largely diluted with normal saline.

By Rectum.—The administration of quinine in the Murphy drip for constitutional effect is probably practical and worthy of more thorough investigation.

Other Uses.—The salts of quinine are sometimes used in enemas, as the following for amebic dysentery:

℞		or	
Quininæ Sulphatis	℥j		30|

Ft. cht. no. x.
Sig.—Use one to ½ gallon of warm water as directed.

Or the following for pinworms in a child:

℞		or	
Quininæ Bisulphatis	gr.	xxx	2|
Quassiæ	℥	j	30|

Sig.—Make a tea with ½ gallon hot water and use as directed.

Quinine and its salts are sometimes used in hair tonics, ointments, etc.

In the treatment of alopecia:

℞[1]		or	
Resorcinolis	gr.	lxxx	5|0
Quininæ	gr.	xv	1|0
Olei Ricini	♏	xx	1|3
Alcoholis	q. s.	f℥iv	120|0

M.
Sig.—Apply as directed.

[1] Stelwagon: Diseases of the Skin.

CINNAMOMUM.

Latin, Cinnamomum. Eng., Cinnamon.

The following are official:

CINNAMOMUM SAIGONICUM. Eng., Saigon Cinnamon. The dried bark of an undetermined species of *Cinnamomum.*

Average Dose.—4 grains (0.25 Gm.).

Official Preparations.

Pulvis Aromaticus. Eng., Aromatic Powder. A finely powdered mixture of Saigon Cinnamon, Ginger, Cardamom and Nutmeg.

Average Dose.—15 grains (1 Gm.).

Fluidextractum Aromaticum. Eng., Aromatic Fluidextract. Represents 100 per cent. of Aromatic Powder in alcohol.

Average Dose.—15 minims (1 mil).

Tinctura Cinnamomi. Eng., Tincture of Cinnamon. Represents 20 per cent. of the drug.

Average Dose.—30 minims (2 mils).

Saigon Cinnamon also enters into several other preparations.

CINNAMOMUM ZEYLANICUM. Eng., Ceylon Cinnamon. The dried inner bark of the cultivated trees of *Cinnamomum zeylanicum.*

Average Dose.—4 grains (0.25 Gm.).

OLEUM CASSIÆ. Eng., Oil of Cinnamon. Synonym, Oil of Cassia. A volatile oil distilled from *Cassia cinnamon.*

Average Dose.—3 minims (0.2 mil).

Official Preparations of the Oil.

Aqua Cinnamomi. Eng., Cinnamon Water. Distilled water saturated with Oil of Cinnamon.

Average Dose.—4 fluidrachms (15 mils).

Spiritus Cinnamomi. Eng., Spirit of Cinnamon. Contains 10 per cent. of the oil in alcohol.

Average Dose.—30 minims (2 mils).

The oil, water and spirit are used in making other official preparations.

Therapeutic Action.—Stomachic and carminative.

Uses.—The preparations of cinnamon are used as vehicles or flavors.

Administration.—With the exception of the water, which is much employed as a pleasant vehicle, the preparations of cinnamon are not often prescribed.

As a vehicle in a prescription for rendering the urine more acid:

℞[1]		or
Acidi Benzoici	ʒij	8
Acidi Borici	ʒiij	12
Aquæ Cinnamomi	fʒxij	360

M.
Sig.—Tablespoonful in water four times daily.

As a vehicle in a prescription for the treatment of chlorosis associated with constipation:

℞[2]		or
Aloes Purificati	gr. xl	3
Mas. Ferri Carb.	ʒij	8
Pulv. Aromatici	q. s.	

M. ft. cap. no. xx.
Sig.—One at bedtime.

COCAINA.

Latin, Cocaina. Eng., Cocaine. An alkaloid obtained from Erythroxylon Coca.

Average Dose.—¼ grain (0.015 Gm.).

Cocainæ Hydrochloridum (Gen., Cocainæ Hydrochloridi). **Eng.,** Cocaine Hydrochloride.

Form.—Colorless prisms, flaky leaflets or white powder.
Odor and Taste.—Odorless and having a bitter taste.
Solubility.—In 0.4 part of water and 3.2 parts of alcohol.
Incompatibles.—Alkalies, bromides, iodides, mercury salts, chloroform, etc.
Average Dose.—¼ grain (0.015 Gm.).

Cocaine Hydrochloride is used almost to the exclusion of all other preparations from coca.

Therapeutic Action.—Local anesthetic, antiemetic, stimulant.

Uses.—Chiefly employed to produce local anesthesia for surgical work; also used for pruritus, eczema, hemorrhoids, anal fissure, etc. Used to counteract unpleasant effects of other agents in the treatment of eye diseases, rhinitis, etc.

Administration.—*By Mouth.*—It is not often prescribed in this way except to allay gastric irritability. The following will illustrate:

[1] Ashton: Practice of Gynecology.
[2] Shoemaker: Materia Medica and Therapeutics.

℞[1]		or	
Cocainæ Hydrochlor.	gr. j		065
Acetanilidi	gr. x		650
Cerii Oxalatis	gr. xx		1300

M. ft. cht. no. iv.
Sig.—One every two hours when indicated.

For Hypodermic Use.—It is used either alone or with such agents as Sodium Chloride or Adrenalin Chloride. Hypodermic solutions are not ordered for the patient's use, and the physician frequently employs tablets to make the solution extemporaneously. They may be ordered as follows:

As a local anesthetic:

℞[2]		or	
Cocainæ Hydrochlor.	gr. j		065
Sodii Chloridi	gr. iij		200
Adrenalin Chlor. (Sol. 1:1000)	♏v		300
Aquæ Destil. Ster.	q. s.	f℥j	30000

M.
Sig.—Formula.

Unless the solution is for immediate use, the adrenalin should be omitted from the prescription, and added just before the preparation is employed.

To prescribe percentage solutions of cocaine:

℞		or	
Cocainæ Hydrochlor.	gr. xviij		12
Aquæ Destil. Ster.	q. s.	f℥j	300

M.
Sig.—Four per cent. solution cocaine hydrochloride.

Locally.—Cocaine is frequently a constituent of local applications.

In the treatment of erythema venenatum:

℞[3]		or	
Cocainæ Hydrochlor.	gr. x		65
Adrenalin Chloridi (1:1000)	f℥ss		1500
Aquæ Rosæ	q. s.	f℥vj	18000

M.
Sig.—Apply every two hours.

[1] Ashton: Practice of Gynecology.
[2] White and Martin: Genito-urinary and Venereal Diseases.
[3] Ohmann-Dumesnil: Diseases of the Skin.

In the treatment of conjunctival inflammation as caused by foreign particles, etc.:

℞		or
Cocainæ Hydrochlor.	gr. ij	13
Adrenalin Chlor. (1:1000)	♏v	30
Acidi Borici	gr. x	60
Aquæ Destil. Ster.	q. s. f℥j	30 00

M.
Sig.—Drop in eye every three hours till relieved.

In the treatment of turgescent rhinitis:

℞		or
Cocainæ Hydrochlor.	gr. v	3
Antipyrinæ	gr. xv	1 0
Aquæ Dest.	q. s. f℥j	30 0

M.
Sig.—For physician's use.

This is usually applied on long, slender rolls of absorbent cotton made by rolling cotton around a probe or applicator and then slipping it off. They are dipped into the solution and inserted in the nose and allowed to remain a few minutes.

In the treatment of erythema scarlatiniforme:

℞[1]		or
Cocainæ Hydrochlor.	gr. iv	26
Acetanilidi	gr. xx	1 30
Zinci Oxidi	℥iss	6 00
Ung. Zinci Oxidi	q. s. ℥ij	60 00

M.
Sig.—Apply thin on a cloth.

In the treatment of herpes progenitalis:

℞[2]		or
Cocainæ Hydrochlor.	gr. j	065
Mentholis	gr. xij	800
Adipis Lanæ Hyd.	q. s. ℥ss	15 000

M.
Sig.—Apply locally.

[1] Ohmann-Dumesnil: Diseases of the Skin.
[2] White and Martin: Genito-urinary and Venereal Diseases.

In the treatment of pruritus ani:

℞[1]		or	
Cocainæ Hydrochlor.	gr. x		65
Phenolis	gr. xx	1	30
Petrolati	q. s. ʒj	30	00

M.

Sig.—Apply locally.

COCCUS.

Latin, Coccus. Eng., Cochineal. The dried female of the insect *Coccus cacti.*

Used in manufacturing as a coloring agent, but not often prescribed.

CODEINA.

See Opium, p. 239.

CODEINA PHOSPHAS.

See Opium, p. 239.

CODEINA SULPHAS.

See Opium, p. 239.

COLCHICUM.

The corm and the seed are official.

Principal Constituent.—Colchicine.

COLCHICI CORMUS. Eng., Colchicum Corm. The dried corm of *Colchicum autumnale.*

Official Preparation.

Extractum Colchici Cormi. Eng., Extract of Colchicum Corm.
Average Dose.—1 grain (0.06 Gm.).

COLCHICI SEMEN. Eng., Colchicum Seed. The dried seeds of *Colchicum autumnale.*
Average Dose.—3 grains (0.2 Gm.).

Official Preparations.

Fluidextractum Colchici Seminis. Eng., Fluidextract of Colchicum Seed.
Average Dose.—3 minims (0.2 mil).

[1] Hughes: **Practice of Medicine.**

Tinctura Colchici Seminis. Eng., Tincture of Colchicum Seed. Represents 10 per cent. of the drug.
Average Dose.—30 minims (2 mils).

Official Alkaloid from Colchicum.

Colchicina. Eng., Colchicine.
Form.—Pale-yellow scales or powder.
Solubility.—In 22 parts of water. Very soluble in alcohol.
Average Dose.—$\frac{1}{120}$ grain (0.0005 Gm.).

Therapeutic Action.—Antirheumatic, analgesic.

Uses.—Employed in the treatment of rheumatism, gout and neuralgia.

Administration.—The Tincture or the unofficial Wine (10 per cent.) are the preparations most employed. They are usually prescribed with other agents, as the salicylates, etc.

In rheumatism, gout, etc.:

℞		or
Sodii Salicylatis	gr. clx	10
Sodii Bicarbonatis	ʒij	8
Tinct. Colchici Sem.	fʒiv	15
Aquæ Menth. Pip.	q. s. fʒiv	120

M.
Sig.—Tablespoonful every four hours.

COLLODIUM—Collodion.

Latin, Collodium (Gen., Collodii). Eng., Collodion. Pyroxylin, 40 Gm.; Ether, 750 mils; Alcohol, 250 mils.

This is a liquid preparation, intended for external use, having for its base a solution of pyroxylin or gun-cotton, in a mixture of ether and alcohol.

Official Preparations.

Collodium Cantharidatum. See Cantharis.
Collodium Flexile. Eng., Flexible Collodion. Collodion, 950 Gm.; Camphor, 20 Gm.; Castor Oil, 30 Gm.

Therapeutic Action.—Protective.

Uses.—As a protective dressing for wounds and as a vehicle for the administration of active agents, as in the treatment of clavus and various skin diseases.

Administration.—They are used locally either alone or with other agents.

In the treatment of clavus:

℞[1]		or
Acidi Salicylici	gr. xxx	2|0
Ext. Cannabis	gr. x	|6
Collodii Flex.	q. s. f℥ss	15|0

M.
Sig.—Apply twice daily.

Many prescribers add about 25 per cent. of Oleum Ricini to collodion to render it more flexible and to prevent too rapid evaporation.

In the treatment of psoriasis:

℞[2]		or
Chrysarobini	℥j	4|0
Acidi Salicylici	gr. xx	1|3
Ætheris	f℥j	4|0
Olei Ricini	♏x	|6
Collodii	q. s. f℥j	30|0

M.
Sig.—Paint on affected parts.

COLOCYNTHIS.

Latin, Colocynthis (Gen., Colocynthidis). Eng., Colocynth. Synonym, Bitter Apple. The peeled dried fruit of *Citrullus Colocynthis.*

Average Dose.—1 grain (0.06 Gm.).

Official Preparations.

Extractum Colocynthidis. Eng., Extract of Colocynth.
Average Dose.—½ grain (0.03 Gm.).

Extractum Colocynthidis Compositum. Eng., Compound Extract of Colocynth. Extract of Colocynth, 160 Gm.; Aloes, 500 Gm.; Resin of Scammony, 140 Gm.; Cardamom Seed, 50 Gm.; Powdered Soap, 150 Gm. A bitter, brownish powder.
Average Dose.—4 grains (0.25 Gm.).

Compound Extract of Colocynth is a constituent in the official Pilulæ Catharticæ Compositæ.

Therapeutic Action.—Purgative of the hydragogue, drastic, and possibly cholagogue type.

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[1] Stelwagon: Diseases of the Skin.
[2] *Ibid.*

Uses.—Employed almost exclusively in combination with other agents to produce purgation.

Administration.—Compound Extract of Colocynth is seldom prescribed alone, but it is sometimes used with other purgative agents. The full U. S. P. dose is not often employed. It is very apt to produce griping. Combinations like the following are used:

As a postoperative laxative:

℞[1]		or	
Ext. Belladon. Fol.	gr. j		065
Ext. Cascaræ Sag.	gr. xx	1	300
Ext. Colocynth. Comp.	gr. xxv	1	600

M. ft. cap. no. x.
Sig.—One at bedtime.

As a purgative:

℞		or	
Hydrarg. Chlor. Mitis	gr. iij		200
Ext. Colocynth. Comp.	gr. vj		400
Ext. Hyoscyami	gr. j		065

M. ft. cap. no. iij.
Sig.—One every hour.

COPAIBA.

Latin, Copaiba (Gen., Copaibæ). Eng., Copaiba. Synonym, Balsam of Copaiba. An oleoresin derived from South American species of *Copaiba*.

Form.—A pale-yellow or brownish-yellow, more or less transparent and viscid liquid.

Odor and Taste.—Very disagreeable.

Average Dose.—15 minims (1 mil).

Therapeutic Action.—Diuretic, antiseptic.

Uses.—Its disagreeable taste and odor and disturbance of digestive function have caused this drug to be almost dropped by the profession. It has been recommended for gonorrhea, cystitis and kindred conditions.

Administration.—Seldom prescribed. It is best administered in the ready-prepared, soft, elastic capsules. It can be obtained in this form either alone or with other agents, as Salol, Oil of Santal, etc.

[1] Ashton: Practice of Gynecology.

CORIANDRUM.

Latin, Coriandrum. Eng., Coriander. Synonym, Coriander Seed. The dried ripe fruit of *Coriandrum sativum.*

Average Dose.—8 grains (0.5 Gm.).

Official Constituent.

Oleum Coriandri. Eng., Oil of Coriander.
Average Dose.—3 minims (0.2 mil).
Solubility.—Insoluble in water, soluble in alcohol.

Therapeutic Action.—Stomachic and carminative.

Uses.—As a flavoring agent and recommended to prevent griping of purgatives.

Administration.—Oil of Coriander is contained in several official preparations. Coriander or the Oil are seldom prescribed as such.

COTARNINÆ HYDROCHLORIDUM.

Latin, Cotarninæ Hydrochloridum (Gen., Cotarninæ Hydrochloridi). Eng., Cotarnine Hydrochloride. Synonym, Stypticin. The hydrochloride of a synthetic alkaloid obtained from narcotine.

Form.—Yellow powder.

Odor and Taste.—Practically odorless and tasteless.

Solubility.—Very soluble in water or alcohol; deliquescent.

Average Dose.—1 grain (0.06 Gm.).

Therapeutic Action.—Hemostatic.

Uses.—Used to aid in arresting hemorrhage, as pulmonary, uterine, etc.; also in the treatment of purpura hemorrhagica.

Administration.—Usually prescribed alone in capsules.

CREOSOTUM.

Latin, Creosotum (Gen., Creosoti). Eng., Creosote. Synonym, Beechwood Creosote. A mixture of phenols and phenol derivatives, chiefly guaiacol and creosol, obtained during the distillation of wood-tar.

Form.—An almost colorless liquid.

Odor and Taste.—Penetrating odor and burning taste.

Solubility.—In about 140 parts of water, but without forming a clear solution. Freely soluble in alcohol.

Incompatibles.—Cupric, ferric and silver salts, acacia, albumin, and oxidizing agents.

Average Dose.—4 minims (0.25 mil).

Official Preparations and Salt.

Aqua Creosoti. Eng., Creosote Water. Creosote, 10 mils; Distilled Water, 990 mils.

Average Dose.—2½. fluidrachms (10 mils).

Creosoti Carbonas (Gen., Creosoti Carbonatis). Eng., Creosote Carbonate. Synonym, Creosotal. A mixture of the carbonates of various constituents of creosote, chiefly guaiacol and creosol.

Form.—A thick, oily liquid.

Odor and Taste.—Almost odorless and tasteless.

Solubility.—Insoluble in water; soluble in alcohol.

Average Dose.—15 grains (1 Gm.).

Therapeutic Action.—Antiseptic, germicide, expectorant, irritant.

Uses.—Creosote is employed by mouth or inhalation in the treatment of coughs, bronchitis, pneumonia, tuberculosis, croup, etc. Locally it is used for toothache and for various skin diseases.

The carbonate is used by mouth in the treatment of bronchitis, pneumonia, tuberculosis, etc.

Administration.—*By Mouth.*—Creosote is too powerful an irritant to be prescribed pure, but is frequently used in bland liquids, as emulsions, particularly the Emulsion of Codliver Oil and the Emulsion of Oil of Turpentine.

Prescribed alone, as in the treatment of tuberculosis:

℞ or

Creosote ..... f℥ij 60

Sig.—Begin with four (4) drops as directed.

In the treatment of tuberculosis, bronchitis, etc.:

℞ or

Creosoti ..... f℥j 4

Emul. Ol. Morrh. cum Hypoph.....q. s. Oj 480

M. tere bene.

Sig.—Tablespoonful after meals and at bedtime. (Shake-label.)

Or:

℞ or

Creosoti Carbonatis ..... f℥v 19

Emul. Ol. Morrh. cum Hypoph.....q. s. Oj 480

M. tere bene.

Sig.—Tablespoonful after meals and at bedtime. (Shake-label.)

℞ or

Creosoti ..... f℥ss 2

Emul. Petrolei ..... f℥viij 240

M. tere bene.

Sig.—Tablespoonful after meals and at bedtime. (Shake-label.)

In the treatment of bronchitis:

℞[1]		or
Terebeni	f℥ij	8
Creosoti	fʒss	2
Acaciæ	q. s.	
Aquæ Chloroformi	q. s. f℥iij	90

M. ft. emul.

Sig.—Teaspoonful with water every four hours.

In the treatment of tuberculosis:

℞[2]		or
Creosoti	f℥j	4
Tinct. Gentianæ Comp.	f℥j	30
Alcoholis	q. s. f℥viij	240

M.

Sig.—Teaspoonful in water or milk after meals.

In the treatment of tuberculosis:

℞[3]		or
Creosoti	♏xxiv	1|5
Glycerini	f℥ij	60|0
Tinct. Aurantii Dulc.	q. s. f℥iij	90|0

M.

Sig.—Teaspoonful in water or milk after meals.

Creosote Carbonate, being less irritating, may be administered alone in capsules.

Creosote is frequently employed as an inhalation, alone or with other agents. A common method is to arrange for a supply of aqueous vapor, as in the following:

As an inhalation in bronchitis, laryngitis, etc.

℞		or
Creosoti	f℥ij	8
Tinct. Benzoini Co.	q. s. f℥ij	60

M.

Sig.—Use teaspoonful to pitcher of hot water as directed.

Patient may be given instructions, as to use for fifteen minutes every three hours. Children are sometimes best treated during sleep by making a tent out of a newspaper.

Locally.—Creosote is a constituent of many of the toothache remedies, or is used alone for that purpose.

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[1] Hughes: Practice of Medicine.

[2] Musser and Kelly: Practical Treatment.

[3] *Ibid.*

CRESOL.

Latin, Cresol (Gen., Cresolis). Eng., Cresol. A mixture of isomeric cresols obtained from coal-tar.

A colorless or straw-colored liquid turning yellowish brown on prolonged exposure to light.

Soluble in 50 parts of water, usually forming a cloudy solution.

Average Dose.—1 minim (0.05 mil).

Official Preparation.

Liquor Cresolis Compositus. Eng., Compound Solution of Cresol. Alcohol, 30 mils; Cresol, 500 Gm.; Linseed Oil, 300 Gm.; Potassium Hydroxide, 80 Gm.; Water, to make 1000 Gm.

Miscible with water in all proportions. This was introduced into the U. S. P. to furnish a uniform and reliable preparation to replace the numerous more or less uncertain proprietaries.

Therapeutic Action.—Disinfectant, germicide.

Uses.—Employed as a cleansing solution and dressing after labor and for infected wounds, periostitis and other infective and suppurative conditions.

Administration.—The compound solution or some of the similar proprietary products are employed. They are prescribed alone and used properly diluted with water (1 : 20 to 1 : 1000).

For local use after labor:

℞ or

Liq. Cresolis Co. ..... f℥iv 120|

Sig.—Use teaspoonful to quart of warm water as directed. (Poison-label.)

Nurse is instructed to pour over the vulva after urination, etc.

This prescription, with the exception that the water is used *hot*, is used for soaking the parts in some suppurating conditions, as of the feet in osteoperiostitis, etc.

CRETA PRÆPARATA.

See Calcium, p. 106.

CUBEBA.

Latin, Cubeba. Eng., Cubeb. The dried, unripe but fully grown fruit of *Piper Cubeba.*

Average Dose.—15 grains (1 Gm.).

Official Preparations and Constituents.

Oleoresina Cubebæ. Eng., Oleoresin of Cubeb.
Average Dose.—8 grains (0.5 Gm.).

Trochisci Cubebæ. Eng., Troches of Cubeb. Each troche contains about 0.02 mil (⅓ minim) of Oleoresin of Cubeb.

Oleum Cubebæ. Eng., Oil of Cubeb.
Average Dose.—8 minims (0.5 mil).

Therapeutic Action.—Diuretic, urinary antiseptic, irritant.

Uses.—By mouth for gonorrhea, cystitis, etc. By mouth or inhalation for bronchitis, asthma, hay fever, nasal catarrh, etc.

Administration.—By mouth it is usually prescribed in the form of the ready-prepared capsules, either alone or more frequently with other agents, as copaiba, salol or santal oil. It is used for inhalation in the form of cigarettes or of powders to be smoked in a pipe.

CUPRI SULPHAS.

Latin, Cupri Sulphas. Eng., Copper Sulphate. Synonyms, Blue Vitriol, Blue Stone.

Large, deep-blue crystals.

Average Dose.—Emetic, 4 grains (0.25 Gm.).

Therapeutic Action.—Astringent, styptic, caustic, antiseptic, emetic.

Uses.—Still frequently employed as a domestic remedy, but almost unused by the profession.

DECOCTUM—Decoction.

Decoctions are liquid preparations made by boiling vegetable substances with water. When the strength and method of preparation are not otherwise specified, they are made by boiling 5 parts of the coarsely comminuted drug for fifteen minutes with enough water to make 100 parts. There are no official decoctions.

DIACETYLMORPHINÆ.

See Opium, p. 239.

DIACETYLMORPHINÆ HYDROCHLORIDUM.

See Opium, p. 239.

DIASTASUM.

Latin, Diastasum (Gen., Diastasi). Eng., Diastase. A mixture containing amylolytic enzymes obtained from an infusion of malt. It converts not less than fifty times its weight of potato starch into sugars.

Form.—A yellowish-white powder, or translucent scales.

Odor and Taste.—Odorless and tasteless.

Solubility.—Soluble in water; almost insoluble in alcohol.

Average Dose.—8 grains (0.5 Gm.).

Therapeutic Action.—Digestant.

Uses.—For the digestion of starchy food.

It is seldom prescribed as such, but preparations containing it are sometimes employed.

DIGITALIS.

Latin, Digitalis (Gen., Digitalis). Eng., Digitalis. Synonym, Foxglove. The dried leaves of *Digitalis purpurea.*

Principal Constituents.—The glucosides, digitoxin, digitalin, digitalein, digitonin, digitin; tannic acid, etc.

Average Dose.—1 grain (0.06 Gm.).

Official Preparations.

Fluidextractum Digitalis. Eng., Fluidextract of Digitalis.
Average Dose.—1 minim (0.05 mil).

Infusum Digitalis. Eng., Infusion of Digitalis. Represents 1.5 per cent. of the drug.
Average Dose.—1 fluidrachm (4 mils).

Tinctura Digitalis. Eng., Tincture of Digitalis. Represents 10 per cent. of the drug.
Average Dose.—8 minims (0.5 mil).

Unofficial Preparation.

Digitalinum. Eng., Digitalin. A glucoside obtained from Digitalis.
Average Dose.—1/100 grain (0.0006 Gm.).

This is not to be confused with Digitalinum Germanicum. It seems to have been established that these preparations are uncertain, and that the dosage as usually given is not based on the modern intelligent employment of digitalis.

Many standardized proprietary preparations of digitalis are available.

Therapeutic Action.—Cardiac tonic and stimulant, diuretic.

Uses.—Employed for various cardiac and renal diseases and conditions.

Administration.—The physiologically tested, fat-free tincture put out by the larger pharmaceutical houses is now extensively employed, and is probably the preparation of choice with discriminating prescribers.

All preparations may produce gastric disturbances. For rapid effect it is customary to use some specially prepared preparation hypodermically.

Digitalis or its preparations are usually administered only two or three times a day, as the effect is slow in developing, but lasting.

The tendency among those best able to intelligently use Digitalis is to give rather large doses till effect (or its continuance is contra-indicated), and then maintain the effect with smaller doses. As the effect of the drug is slow in developing, but lasting, it is better to calculate dosage on a twenty-four-hour basis than by the amount of each single administration.

In beginning the use of the drug in a given case, particularly if it is to be used by needle, it is necessary to take into consideration the amount of the drug, if any, that has been recently administered.

The powdered Leaves, Fluidextract, Tincture, and Infusion are administered by mouth. Digitalin is sometimes given by mouth or needle.

Many of our best therapists prescribe the Tincture alone, to be administered by drops, well diluted with water, as:

℞ or

Tincturæ Digitalis ..... f℥j 30|

Sig.—Begin with fifty (50) drops as directed.

Fifty drops would average a little more than twenty minims.

The advantage is that the dose can be readily increased or diminished. It must be remembered, however, that tinctures average about 120 drops to every 60 minims, and that this may vary greatly, owing to shape of dropper, temperature, etc.

As a diuretic, the infusion is the preparation of frequent choice, as it has been claimed that water does not dissolve digitoxin to an appreciable extent, but does dissolve the other active constituents. Present information tends to establish this as an error. It is used alone or with other agents, as Spirit of Nitrous Ether, Potassium Citrate, etc. The infusion should be freshly prepared.

Some common methods of prescribing digitalis are as follows:

In the treatment of heart disease, etc.:

℞		or	
Tinct. Digitalis,			
Tinct. Nucis Vom.	āā. f℥ss		15

Sig.—Twenty (20) drops in water three times a day.

Or:

℞		or	
Tinct. Digitalis.			
Flext. Cascaræ Sag. Ar.	āā f℥vj		22 5
Tinct. Cardam. Co.	q. s. f℥iv		120 0

Sig.—Teaspoonful in water three times a day.

In the treatment of chronic heart disease:

℞[1]		
Digitalis Pulv.,		
Quininæ Hydrochlor.	āā. gr. xv	1
Ext. Valerianæ	3j	4

M. ft. cap. no. xxx.
Sig.—One three times a day.

In the treatment of chronic nephritis with anasarca:

℞		or	
Digitalis Pulv.,			
Scillæ Pulv.,			
Hydrarg. Chlor. Mitis	āā. gr. xx		1 3
Ext. Hyoscyami	gr. x		6

M. ft. cap. no. xx.
Sig.—One after each meal.

This is a much ordered formula, but the calomel is in such dosage that it often will not be tolerated.

In the treatment of goiter:

℞[2]		or	
Strychninæ Sulph.	gr. ss		03
Ferri Arsenatis	gr. ij		13
Extracti Digitalis	gr. iv		26
Extracti Ergotæ	gr. xxx		2 00

M. ft. cap. no. xxiv.
Sig.—One after each meal.

[1] Musser and Kelly: Practical Treatment.
[2] Anders: Practice of Medicine.

In the treatment of ascites:

℞[1]		or
Potassii Acetatis	ʒj	30
Spir. Ætheris Nit.	fʒss	15
Inf. Digitalis	q. s. fʒiv	120

M.

Sig.—Two (2) teaspoonfuls every six hours.

In the treatment of chronic valvular disease:

℞[2]		or
Potassii Acetatis	3j	4
Infusi Digitalis	q. s. fʒij	60

M.

Sig.—Tablespoonful every three hours.

ELATERINUM.

Latin, Elaterinum (Gen., Elaterini). Eng., Elaterin. A principle obtained from Elaterium, a substance deposited by the juice of *Ecballium Elaterium*.

Form.—Minute white scales or crystals.

Odor and Taste.—Odorless; a slightly acrid, bitter taste.

Solubility.—Insoluble in water; soluble in 325 parts of alcohol.

Average Dose.—1/20 grain (0.003 Gm.).

Official Preparation.

Trituratio Elaterini. Eng., Trituration of Elaterin. Contains 10 per cent. of the drug.

Average Dose.—½ grain (0.03 Gm.).

Therapeutic Action.—Drastic purgative.

Uses.—Employed principally in those urgent cases when immediate and active purgation is desired, or when the patient is unable to swallow the dose of other purgatives, as in apoplexy, uremia and eclampsia.

Administration.—The drug is suspended in a small amount of water or olive oil, and if patient is unconscious it is allowed to pass back to the pharynx a few drops at a time.

Elixir Aromaticum.—See Aurantium.

Elixir Glycyrrhizæ.—See Glycyrrhiza.

Emetinæ Hydrochloridum.—See Ipecacuanha.

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[1] Hughes: Practice of Medicine.

[2] Anders: Practice of Medicine.

Emplastrum Belladonnæ.—See Belladonna.
Emplastrum Cantharidis.—See Cantharis.
Emplastrum Capsici.—See Capsicum.
Emplastrum Elasticum. Eng., Rubber Plaster. Synonyms, Rubber Adhesive Plaster; Adhesive Plaster.
Emplastrum Plumbi.—See Plumbum.
Emplastrum Resinæ.—See Terebinthina.
Emplastrum Sinapis.—See Sinapis.
Emulsum Amygdalæ.—See Amygdala.
Emulsum Asafœtidæ.—See Asafœtida.
Emulsum Olei Morrhuæ.—See Oleum Morrhuæ.
Emulsum Olei Terebinthinæ.—See Terebinthina.

ERGOTA.

Latin, Ergota (Gen., Ergotæ). Eng., Ergot. Synonym, Ergot of Rye, Rye Smut.

The carefully dried sclerotium of *Claviceps purpurea*, a fungous growth replacing the grain of rye, *Secale cereale*.

Principal Constituents.—Ergotine, Tannic Acid, etc.

Average Dose.—30 grains (2 Gm.).

Official Preparations.

Extractum Ergotæ. Eng., Extract of Ergot. Synonym, Ergotin. A soft solid about eight times the strength of the drug.
Average Dose.—4 grains (0.25 Gm.).

Fluidextractum Ergotæ. Eng., Fluidextract of Ergot.
Average Dose.—30 minims (2 mils).

Therapeutic Action.—Oxytocic, emmenagogue, and hemostatic (for uterine hemorrhage).

Uses.—Employed after the third stage of labor to promote contraction of the uterus; also for menorrhagia, metrorrhagia, purpura hæmorrhagica, etc.

It should be remembered that Ergot is a hemostatic for uterine hemorrhage, and its indiscriminate use, particularly in cerebral hemorrhage, is to be condemned.

Administration.—For temporary use, as during labor, the Fluidextract is the preparation usually employed. When the use of Ergot is to be continued for some time, it is frequently advisable to administer the Extract in capsules on account of the disagreeable taste of the drug.

The preparation "Ergotin" should not be confused with Ergotine the alkaloid. When a solid preparation is desired it is better to order the official extract.

Most of the larger pharmaceutical manufacturing houses now physiologically test all the ergot they put on the market. Its hypodermic use has sometimes been followed by such unpleasant results that it should be used in this way only in cases of extreme emergency, and then the special aseptic hypodermic preparations should be employed.

Some common methods of prescribing ergot are as follows:

In the treatment of goiter:

℞[1]		or
Strychninæ Sulph.	gr. ss	03
Ferri Arsenitis	gr. ij	13
Extracti Digitalis	gr. iv	26
Extracti Ergotæ	ʒss	2 00

M. ft. cap. no. xxiv.
Sig.—One after each meal.

In the treatment of menorrhagia and metrorrhagia:

℞[2]		or
Strychninæ Sulph.	gr. ss	03
Hydrastininæ Hydrochl.	gr. x	65
Extracti Ergotæ	gr. xl	2 50

M. ft. cap. no. xx.
Sig.—One two hours after meals.

In the treatment of subinvolution of the uterus:

℞[3]		or
Strychninæ Sulph.	gr. j	065
Ext. Ergotæ,		
Quininæ Sulph.	āā. gr. xxx	2 000

M. ft. cap. no. xxx.
Sig.—One before each meal.

In the treatment of menorrhagia, metrorrhagia, etc.:

℞		or
Flext. Ergotæ	fʒj	30
Flext. Hydrastis,		
Tinct. Nucis Vomicæ	āā. fʒss	15
Tinct. Aurant. Dulc.	q. s. fʒiv	120

M.
Sig.—Teaspoonful in water after meals.

[1] Anders: Practice of Medicine.
[2] Ashton: Practice of Gynecology.
[3] Shoemaker: Materia Medica and Therapeutics.

ERIODICTYON.

Latin, Eriodictyon (Gen., Eriodictyi). Eng., Eriodictyon. Synonym, Yerba Santa. The dried leaves of *Eriodictyon californicum.*

Average Dose.—15 grains (1 Gm.).

Official Preparation.

Fluidextractum Eriodictyi. Eng., Fluidextract of Eriodictyon.
Average Dose.—15 minims (1 mil).

National Formulary Preparations.

Elixir Eriodictyi Aromaticum. Eng., Aromatic Elixir of Eriodictyon. Represents 6.25 per cent. of the drug with aromatics.
Average Dose.—2 fluidrachms (8 mils).

Syrupus Eriodictyi Aromaticus. Eng., Aromatic Syrup of Eriodictyon. Represents 3.2 per cent. of the drug with aromatics.
Average Dose.—2 fluidrachms (8 mils).

Therapeutic Action.—Classed as an expectorant and tonic.

Uses.—Employed almost exclusively to disguise the taste of quinine.

Administration.—For disguising the taste of quinine, the Aromatic Syrup is preferable. The Aromatic Elixir is also sometimes used. The taste of Eriodictyon itself is very objectionable to some patients.

℞		or	
Quininæ Sulphatis	gr.	xxx	2
Syr. Eriodictyi Arom. .....q. s.	f℥	ij	60

M.
Sig.—Teaspoonful as directed. (Shake-label.)

EUCALYPTUS.

Latin, Eucalyptus. Eng., Eucalyptus. Synonym, Blue Gum Leaves. The dried leaves of *Eucalyptus Globulus,* collected from the older parts of the tree.

Average Dose.—30 grains (2 Gm.).

Official Preparation and Constituents.

Fluidextractum Eucalypti. Eng., Fluidextract of Eucalyptus.
Average Dose.—30 minims (2 mils).

Oleum Eucalypti. Eng., Oil of Eucalyptus.
Average Dose.—8 minims (0.5 mil).

Eucalyptol. Eng., Eucalyptol. An organic compound obtained from the volatile oil of Eucalyptus and other sources. A colorless liquid, very slightly soluble in water; soluble in alcohol.

Average Dose.—5 minims (0.3 mil).

Therapeutic Action.—Antiseptic, rubefacient, expectorant, antispasmodic.

Uses.—Principally employed as Eucalyptol in sprays or inhalations for nasal catarrh, acute rhinitis, hay fever, asthma, bronchitis, etc. Sometimes used externally in the treatment of ulcers and various skin diseases.

Administration.—Eucalyptol and the Oil of Eucalyptus are frequently employed in oily sprays. Liquid petrolatum is an excellent vehicle. If used in aqueous solutions the quantity must be comparatively small. For external use they may be prescribed in bland oils, or such ointment vehicles as Petrolatum.

℞		or	
Camphoræ	gr. iv		26
Eucalyptolis,			
Ol. Pini Pum.,			
Ol. Menth. Pip.	āā. gtt. iv		26
Petrolati Liq.	q. s. f℥iv	120	00

M.

Sig.—Spray nose and throat every three hours.

EUGENOL.

See Caryophyllus, p. 119.

Extractum Aconiti.—See Aconitum.
Extractum Belladonnæ Foliorum.—See Belladonna.
Extractum Cannabis.—See Cannabis.
Extractum Cascaræ Sagradæ.—See Cascara Sagrada.
Extractum Cimicifugæ.—See Cimicifuga.
Extractum Colchici Cormi.—See Colchicum.
Extractum Colocynthidis.—See Colocynthis.
Extractum Colocynthidis Compositum.—See Colocynthis.
Extractum Ergotæ.—See Ergota.
Extractum Fellis Bovis.—See Fel Bovis.
Extractum Gelsemii.—See Gelsemium.
Extractum Gentianæ.—See Gentiana.
Extractum Glycyrrhizæ.—See Glycyrrhiza.
Extractum Glycyrrhizæ Purum.—See Glycyrrhiza.
Extractum Hydrastis.—See Hydrastis.
Extractum Hyoscyami.—See Hyoscyamus.
Extractum Malti.—See Maltum.
Extractum Nucis Vomicæ.—See Nux Vomica.

Extractum Opii.—See Opium.
Extractum Physostigmatis.—See Physostigma.
Extractum Rhei.—See Rheum.
Extractum Stramonii.—See Stramonium.
Extractum Sumbul.—See Sumbul.
Extractum Taraxaci.—See Taraxacum.
Extractum Viburni Prunifolii.—See Viburnum Prunifolium.

FEL BOVIS.

Latin, Fel Bovis (Gen., Fellis Bovis). Eng., Oxgall. The fresh bile of the ox, *Bos taurus.*

A brownish-green or dark-green liquid.

Official Preparation.

Extractum Fellis Bovis. Eng., Extract of Oxgall. Synonym, Powdered Extract of Oxgall. A powder representing eight times the strength of oxgall.

Average Dose.—1½ grains (0.1 Gm.).

Therapeutic Action.—Cholagogue, purgative and intestinal antiseptic.

Uses.—It is generally prescribed with other purgative agents, particularly for intestinal indigestion, tympanites, etc.

The previous Pharmacopeia did not contain a usable (dried) preparation, so the unofficial Inspissated Oxgall (Fel Bovis Inspissatus) was the preparation most frequently employed. This should now be replaced by the official powdered extract, which answers every requirement.

℞

Hydrarg. Chlor. Mitis	gr. v	30
Ext. Fel. Bovis	gr. ij	12
Pulv. Rhei	gr. v	30
Ext. Hyoscyami	gr. j	06

M. ft. cap. no. iij.
Sig.—One every two hours.

FERRUM.

Latin, Ferrum (Gen., Ferri). Eng., Iron.

Metallic iron in the form of fine bright wire.

Official Preparations and Salts.

FERRUM REDUCTUM. Eng., Reduced Iron. Synonyms, Iron by Hydrogen, Black Iron, Quevennes' Iron. Contains not less than 90 per cent. of metallic Iron.

Form.—A grayish-black, granular powder.
Odor and Taste.—Odorless and Tasteless.
Solubility.—Insoluble in water or alcohol.
Incompatibles.—Oxidizing agents, salts of antimony, bismuth, copper, lead, mercury and silver.
Average Dose.—1 grain (0.06 Gm.).

FERRI CARBONAS SACCHARATUS. Eng., Saccharated Ferrous Carbonate. A brownish powder containing about 15 per cent. of Ferrous Carbonate.
Average Dose.—4 grains (0.25 Gm.).

MASSA FERRI CARBONATIS. Eng., Mass of Ferrous Carbonate. Synonym, Vallet's Mass. A soft, dark-colored mass containing about 35 per cent. of Ferrous Carbonate.
Average Dose.—4 grains (0.25 Gm.).

PILULÆ FERRI CARBONATIS. Eng., Pills of Ferrous Carbonate. Synonyms, Blaud's Pills, Ferruginous Pills, Chalybeate Pills. Each pill contains about 1 grain of Ferrous Carbonate.
Average Dose.—2 pills.

FERRI CHLORIDUM. Eng., Ferric Chloride. Synonym, Iron Perchloride.
Average Dose.—1 grain (0.06 Gm.).

Liquor Ferri Chloridi. Eng., Solution of Ferric Chloride.
Average Dose.—1½ minims (0.1 mil.).

Tinctura Ferri Chloridi. Eng., Tincture of Ferric Chloride. Synonym, Tincture of Iron. A hydroalcoholic liquid containing some free acid and about 13 per cent. of Ferric Chloride.
Average Dose.—8 minims (0.5 mil).

FERRI ET AMMONII CITRAS. Eng., Iron and Ammonium Citrate.
Average Dose.—4 grains (0.25 Gm.).

FERRI ET QUININÆ CITRAS. Eng., Iron and Quinine Citrate. Synonyms, Ferri et Quininæ Citras Solubilis (U. S. P., viii).
Average Dose.—4 grains (0.25 Gm.).

FERRI PHOSPHAS. Eng., Ferric Phosphate. Synonym, Ferri Phosphas Solubilis (U. S. P., viii).
Average Dose.—4 grains (0.25 Gm.).

FERRI HYDROXIDUM CUM MAGNESII OXIDO. Eng., Ferric Hydroxide with Magnesium Oxide.
Average Dose.—Arsenical antidote—4 fluidounces (120 mils).

SYRUPUS FERRI IODIDI. Eng., Syrup of Ferrous Iodide. Contains about 5 per cent. by weight of Ferrous Iodide.
Average Dose.—15 minims (1 mil).

PILULÆ FERRI IODIDI. Eng., Pills of Ferrous Iodide. Each pill contains about 1 grain of Ferrous Iodide.
Average Dose.—2 pills.

FERRI SULPHAS. Eng., Ferrous Sulphate. Synonyms, Green Vitriol; if impure, Copperas.

Average Dose.—1½ grains (0.1 Gm.).

Ferri Sulphas Exsiccatus. Eng., Exsiccated Ferrous Sulphate. Synonyms, Dried Ferrous Sulphate. 100 parts of Ferrous Sulphate are deprived of water of crystallization till the weight is reduced to about 65 parts. A grayish-white powder.

Average Dose.—1 grain (0.06 Gm.).

Ferri Sulphas Granulatus. Eng., Granulated Ferrous Sulphate. A greenish, granular powder.

Average Dose.—1½ grains (0.1 Gm.).

Liquor Ferri Subsulphatis. Eng., Solution of Ferric Subsulphate. Synonym, Monsel's Solution.

Average Dose.—3 minims (0.2 mil).

Liquor Ferri Tersulphatis. Eng., Solution of Ferric Sulphate.

LIQUOR FERRI ET AMMONII ACETATIS. Eng., Solution of Iron and Ammonium Acetate. Synonym, Basham's Mixture.

Average Dose.—4 fluidrachms (15 mils).

Unofficial Preparations.

Compound Glycerophosphates in the form of the syrup, elixir or solution (without sugar) have about the same formula as the Compound Syrup of Hypophosphites (see p. 30) except that the glycerophosphates instead of the hypophosphites are used. They seem to be excellent pharmaceutical products. The preparation without sugar is particularly popular.

Average Dose.—1 fluidrachm (4 mils).

Elixir Ferri, Quininæ et Strychninæ Phosphatum. Eng., Elixir of the Phosphates of Iron, Quinine, and Strychnine. Synonym, Elixir of I. Q. and S. Each fluidounce represents, about, Iron Phosphate 8 grains, Quinine 4 grains, Strychnine ⅛ grain.

Average Dose.—1 fluidounce (4 mils).

This was official in the previous Pharmacopeia and is one of the most extensively used preparations in medicine.

Liquor Ferri Peptonati Cum Mangano. Eng., Solution of Peptone of Iron with Manganese.

A National Formulary preparation frequently prescribed.

Average Dose.—2 fluidrachms (8 mils).

Therapeutic Action.—Tonic, hematinic. The iodide is also alterative and the chloride, sulphate and some others are astringent and styptic. Most of the solutions of iron are antiseptic or disinfectant.

Uses.—Internally the preparations of iron are employed in the treatment of anemia, chlorosis, malaria, amenorrhea, erysipelas and many other conditions. Locally, they are used for tonsillitis, pharyngitis, diphtheria, epistaxis, gastric ulcer, etc.

Administration.—The medicinal use of the preparations of Iron are confined almost altogether to administration by mouth. They are usually either given alone or associated only with the salts of metals or alkaloids. Administration may be either in solid form or in solution.

The greatest care should be used to protect the patient's teeth, particularly in administering the syrup of the iodide or the tincture of the chloride. These should not be given for an extended period of time. Probably the safest way to protect the teeth is to have the patient take the medicine, well diluted with water, through a glass tube extending well back into the mouth, and then clean the mouth and teeth with a solution of sodium bicarbonate.

Solid Form.—Where comparatively large amounts of iron are to be given, or the use continued for an extended time, this is usually the most desirable form on account of the action of iron on the teeth and the unpleasant taste of most of the liquid preparations. Reduced Iron, the Exsiccated Ferrous Sulphate, the Mass of Ferrous Carbonate, Pills of Ferrous Carbonate and the Pills of Ferrous Iodide are employed, but the latter are particularly apt to deteriorate with age, and they are so infrequently used that it is usually hard to find a fresh stock on the shelves of the average pharmacy.

It should be remembered that the Mass of Ferrous Carbonate is a soft solid; so, while it can be dispensed in capsules alone or with other agents, it will first have to be made into pill form.

The Pills of Ferrous Carbonate are on the market in all sizes, from about 2 to 5 grains. The "5-grain" pill, which contains about 1 grain of the Ferrous Carbonate, is the official pill and is what is dispensed unless some other size is specified. It has been claimed that these pills soon become insoluble if kept, but this does not seem to be the case if they are well made.

In the treatment of chlorosis:

℞

Pil. Ferri Carbonatis ..... no. c

Sig.—Two after each meal.

This is the most economical way of administering Ferrous Carbonate.

In the treatment of chlorosis, etc.:

℞		or
Ferri Sulphatis Gran.	gr. cc	12
Potassii Carbonatis	gr. c	6

M. ft. cap. no. L.

Sig.—One after each meal.

Strychnine, arsenic, etc., may also be ordered in this. This forms the fresh carbonate and liberates water of crystallization, producing a moist mixture, which has to be made into a mass before putting into capsules.

In the treatment of anemia:

℞[1]		or
Ferri Sulph. Exsic.,		
Potassii Bicarb.	āā. 3j	4

M. ft. cap. no. xxiv.
Sig.—One after each meal.

The idea here is to have the fresh Ferrous Carbonate formed in the stomach.

In the treatment of amenorrhea (to be used 6 days preceding expected period):

℞[2]		or
Aloini	gr. ij	13
Mas. Ferri Carb.	gr. xxx	2|00
Apiol	f3j	4|00

M. ft. cap. no. xij.
Sig.—One morning and evening.

In the treatment of chlorosis associated with constipation:

℞[3]		or
Aloes	gr. xl	3
Mas. Ferri Carb.	3ij	8
Pulv. Aromatici	q. s.	

M. ft. cap. no. xx.
Sig.—One at bedtime.

As a tonic, particularly in the treatment of malaria:

℞		or
Strychninæ Sulphatis	gr. j	065
Arseni Trioxidi	gr. ij	130
Quininæ Sulphatis	gr. cl	10|000
Ferri Reducti	gr. c	6|000

M. ft. cap. no. L.
Sig.—One after each meal.

Massa Ferri Carbonatis in four-grain doses may be used instead of the Ferrum Reductum.

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[1] Musser and Kelly: Practical Treatment.
[2] Shoemaker: Materia Medica and Therapeutics.
[3] *Ibid.*

In the treatment of neurasthenia, hysteria, etc.:

℞[1]		or
Arseni Trioxidi	gr. ss	03
Asafœtida Pulv.	gr. x	65
Ext. Sumbul,		
Ferri Sulph. Exsic.	āā. gr. xx	1 30

M. ft. cap. no. xx.
Sig.—One after each meal.

In the treatment of goiter:

℞[2]		or
Strychninæ Sulph.	gr. ss	03
Ferri Arsenatis	gr. ij	13
Extracti Digitalis	gr. iv	26
Ext. Ergotæ	3ss	2 00

M. ft. cap. no. xxiv.
Sig.—One after each meal.

As a postoperative tonic:

℞[3]		or
Hydrarg. Chlor. Corros.,		
Arseni Trioxidi	āā. gr. j	065
Ext. Nucis Vomicæ	gr. xxv	1 600
Ferri et Quin. Cit.	gr. cc	13 000

M. ft. cap. no. c.
Sig.—One after each meal.

In Solution.—Care should be used to protect the teeth, as previously outlined,

The Tincture of Ferric Chloride, the Syrup of Ferrous Iodide, the Elixir of Iron, Quinine and Strychnine and the Compound Syrup of Hypophosphites are the preparations most frequently employed.

The Syrup of Ferrous Iodide is usually prescribed alone. It is the most alterative preparation of iron. It is damaging to the teeth, is apt to produce iodism, and altogether is so undesirable that it seems that its use should be discouraged. Probably the safest way to administer the drug is to order the patient to put the desired number of drops in a capsule just before taking.

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[1] Shoemaker: Materia Medica and Therapeutics.
[2] Anders: Practice of Medicine.
[3] Ashton: Practice of Gynecology.

For a child 8 years old:

℞ or

Syr. Ferri Iodidi	f℥j	30

Sig.—Take five (5) drops in capsule after meals.

The Tincture of Ferric Chloride is used alone or with other agents. The U. S. P. average dose is frequently exceeded.

For example, the following is sometimes used empirically in erysipelas:

℞ or

Tinct. Ferri Chlor., Elixir Aromatici	āā. f℥j	30

M.

Sig.—Teaspoonful in water through a tube every four hours.

Some combinations are as follows:

As a tonic in the treatment of anemia, etc.:

℞ or

Hydrarg. Chlor. Corros.	gr. ij	13
Liq. Acidi Arsenosi	f℥ij	8 00
Tinct. Ferri Chlor.	f℥iv	15 00
Acidi Hydrochl. Dil.	f℥iv	15 00
Glycerini	f℥j	30 00
Aquæ Dest. q. s.	f℥vj	180 00

M.

Sig.—Teaspoonful in water after meals.

As a tonic, particularly in malaria:

℞ or

Quininæ Sulphatis	gr. cl	10
Liq. Acidi Arsenosi	℥ij	8
Tinct. Ferri Chlor.	f℥vj	23
Glycerini	f℥j	30
Aquæ q. s.	f℥vj	180

M.

Sig.—Teaspoonful in water after meals.

In an aperient preparation for the treatment of comedo:

℞[1] or

Magnesii Sulphatis	℥iss	45
Ferri Sulphatis	gr. xvj	1
Acidi Sulph. Dil.	℥ij	8
Aquæ q. s.	f℥viij	240

M.

Sig.—Tablespoonful in water before breakfast.

[1] Ohmann-Dumesnil: Diseases of the Skin.

In the treatment of stomatitis of childhood:

℞[1]		or	
Potassii Chloratis	gr. xxiv	1	5
Tinct. Ferri Chlor.	♏xxxvj	2	5
Syr. Zingiberis	f℥ss	15	0
Aquæ	q. s. f℥iij	90	0

M.

Sig.—Teaspoonful in water every two hours.

In the treatment of tonsillitis, pharyngitis, etc.:

℞		or	
Potassii Chloratis	℥ij	8	
Tinct. Ferri Chlor.	f℥iij	12	0
Acidi Sulphurosi	f℥iv	15	0
Glycerini	f℥vj	22	0
Aquæ	q. s. f℥vj	180	0

M.

Sig.;Tablespoonful in water every four hours.

The Elixir of Iron, Quinine and Strychnine Phosphate, the Compound Syrup of Hypophosphites, the Compound Glycerophosphates and the Solution of the Peptonate of Iron with Manganese are used where a more pleasant preparation is desired and the action of the other agents included is also indicated. They are usually prescribed alone.

As a tonic, etc.:

℞		or	
Elix. Ferri, Quin. et Strych. Phos.	f℥viij	240	

Sig.—Teaspoonful in water after meals.

As a tonic, etc.:

℞		or	
Liq. Ferri Pep. cum Mang.	f℥viij	240	

Sig.—Two (2) teaspoonfuls in water after meals.

In smaller doses this is frequently administered to children. Solution of Arsenous Acid, etc., may be added as indicated.

Fluidextractum Aconiti.—See Aconitum.
Fluidextractum Aromaticum.—See Cinnamomum.
Fluidextractum Aspidospermatis.—See Aspidosperma.
Fluidextractum Aurantii Amari.—See Aurantium.
Fliudextractum Belladonnæ Radicis.—See Belladonna.
Fluidextractum Buchu.—See Buchu.

[1] Ruhrah: Diseases of Children.

Fluidextractum Cannabis.—See Cannabis.
Fluidextractum Cascaræ Sagradæ.—See Cascara Sagrada.
Fluidextractum Cascaræ Sagradæ Aromaticum.—See Cascara Sagrada.
Fluidextractum Cimicifugæ.—See Cimicifuga.
Fluidextractum Cinchonæ.—See Cinchona.
Fluidextractum Colchici Seminis.—See Colchicum.
Fluidextractum Digitalis.—See Digitalis.
Fluidextractum Ergotæ.—See Ergota.
Fluidextractum Eriodictyi.—See Eriodictyon.
Fluidextractum Eucalypti.—See Eucalyptus.
Fluidextractum Frangulæ.—See Frangula.
Fluidextractum Gelsemii.—See Gelsemium.
Fluidextractum Gentianæ.—See Gentiana.
Fluidextractum Glycyrrhizæ.—See Glycyrrhiza.
Fluidextractum Granati.—See Granatum.
Fluidextractum Grindeliæ.—See Grindelia.
Fluidextractum Guaranæ.—See Guarana.
Fluidextractum Hydrastis.—See Hydrastis.
Fluidextractum Hyoscyami.—See Hyoscyamus.
Fluidextractum Ipecacuanhæ.—See Ipecacuanha.
Fluidextractum Lobeliæ.—See Lobelia.
Fluidextractum Nucis Vomicæ.—See Nux Vomica.
Fluidextractum Pilocarpi.—See Pilocarpus.
Fluidextractum Podophylli.—See Podophyllum.
Fluidextractum Rhei.—See Rheum.
Fluidextractum Rosæ.—See Rosa.
Fluidextractum Sabal.—See Sabal.
Fluidextractum Sarsaparillæ.—See Sarsaparilla.
Fluidextractum Sarsaparillæ Compositum.—See Sarsaparilla.
Fluidextractum Scillæ.—See Scilla.
Fluidextractum Senegæ.—See Senega.
Fluidextractum Sennæ.—See Senna.
Fluidextractum Spigeliæ.—See Spigelia.
Fluidextractum Staphisagriæ.—See Staphisagria.
Fluidextractum Stillingiæ.—See Stillingia.
Fluidextractum Sumbul.—See Sumbul.
Fluidextractum Taraxaci.—See Taraxacum.
Fluidextractum Tritici.—See Triticum.
Fluidextractum Uvæ Ursi.—See Uva Ursi.
Fluidextractum Veratri Viridi.—See Veratrum Viride.
Fluidextractum Viburni Prunifolii.—See Viburnum Prunifolium.
Fluidextractum Xanthoxyli.—See Xanthoxylum.
Fluidextractum Zingiberis.—See Zingiber.

FŒNICULUM.

Latin, Fœniculum. Eng., Fennel. Synonym, Fennel Seed. The dried, ripe fruit of cultivated varieties of *Fœniculum vulgare*.

Average Dose.—15 grains (1 Gm.).

Official Constituent and Preparations.

Oleum Fœniculi. Eng., Oil of Fennel.
Average Dose.—3 minims (0.2 mil).

Aqua Fœniculi. Eng., Fennel Water.
Average Dose.—4 fluidrachms (15 mils).

Fennel and the Oil of Fennel are contained in several official preparations.

Therapeutic Action.—Classed as a stomachic, carminative, galactagogue, diuretic, etc.

Uses.—Principally used in combination with other agents as a flavor and possibly to prevent the griping of purgatives. Seldom prescribed as such.

FORMALDEHYDUM.

Official in the form of the solution given below.

Liquor Formaldehydi. Eng., Solution of Formaldehyde. Synonym, Formalin. A colorless, aqueous solution containing not less than 37 per cent. by weight of absolute Formaldehyde (HCOH). It is miscible with water or alcohol.

Therapeutic Action.—Antiseptic, disinfectant.

This preparation is, of course, extensively used by the profession, but is seldom prescribed. It is the most desirable agent for disinfecting rooms, clothing, etc., as it does not damage or decolorize material. Special "generators" are usually employed for liberating the gas from solution. For rooms about 1 pint is used for each 1000 cubic feet of space.

Formaldehyde Torches are a convenient form for use. They contain paraformaldehyde, a solid condensation product of formaldehyde, and the gas is liberated by heat. See Paraformaldehydum.

FRANGULA.

Latin, Frangula. Eng., Frangula. Synonym, Buckthorn. The dried bark of *Rhamnus Frangula.*

Average Dose.—15 grains (1 Gm.).

Official Preparation.

Fluidextractum Frangulæ. Eng., Fluidextract of Frangula.
Average Dose.—15 minims (1 mil).

Therapeutic Action.—Laxative.

Uses.—Chronic constipation. Seldom prescribed.

GALLA.

Latin, Galla. Eng., Nutgall. An excrescence on *Quercus infectoria* and other allied species of Quercus, caused by the punctures and deposited ova of *Cynips tinctoria*.

Principal Constituents.

Tannic Acid, Gallic Acid, etc.

Official Preparation.

Unguentum Gallæ. Eng., Nutgall Ointment. Contains 20 per cent. of the drug.

Therapeutic Action.—Astringent, styptic.

Uses.—Almost unused as such. See Tannic and Gallic Acids.

GAMBIR.

Latin, Gambir. Eng., Gambir. Synonym, Pale Catechu. An extract prepared from the leaves and twigs of *Ourouparia Gambir*.

Average Dose.—15 grains (1 Gm.).

Official Preparation.

Tinctura Gambir Composita. Eng., Compound Tincture of Gambir. Represents Gambir, 5 per cent.; Cinnamon, 2.5 per cent.

Average Dose.—1 fluidrachm (4 mils).

Therapeutic Action.—Astringent.

Uses.—Used in the treatment of diarrhea, hemorrhoids, epistaxis, etc.

This was introduced into the Pharmacopeia (viii) to replace Catechu.

Administration.—The Compound Tincture is the preparation of choice. Its most common use is as an intestinal astringent, in which case it is usually prescribed with other agents, as bismuth subnitrate, chalk mixture, etc.

GELATINUM.

Latin, Gelatinum. Eng., Gelatin. The purified product obtained from certain animal tissues, as skin, ligaments, and bones, by treatment with boiling water.

An amorphous, more or less transparent solid.

Official Preparation.

Gelatinum Glycerinatum. Eng., Glycerinated Gelatin. Contains 50 per cent. of gelatin.

GELSEMIUM.

Latin, Gelsemium. Eng., Gelsemium. Synonyms, Yellow Jasmine (or Jassamine), Carolina Jasmine. The dried rhizome and roots of *Gelsemium sempervirens.*

Average Dose.—½ grain (0.03 Gm.).

Official Preparations.

Extractum Gelsemii. Eng., Extract of Gelsemium. A powder representing about 4 times the strength of the drug.

Average Dose.—⅛ grain (0.01 Gm.).

Fluidextractum Gelsemii. Eng., Fluidextract of Gelsemium.

Average Dose.—½ minim (0.3 mil).

Tinctura Gelsemii. Eng., Tincture of Gelsemium. Represents 10 per cent. of the drug.

Average Dose.—4 minims (0.25 mil).

Therapeutic Action.—Classed as a nervine, sedative, antispasmodic, antiperiodic.

Uses.—Recommended for headache, migraine, neuralgia, dysmenorrhea, asthma, whooping-cough, chorea, laryngismus stridulus, etc.

Administration.—It is usually recommended in the form of the tincture to be prescribed alone. Not often employed.

GENTIANA.

Latin, Gentiana (Gen., Gentianæ). Eng., Gentian. The dried rhizome and roots of *Gentiana lutea.*

Average dose.—15 grains (1 Gm.).

Official Preparations.

Extractum Gentianæ. Eng., Extract of Gentian.

Average Dose.—4 grains (0.25 Gm.).

Fluidextractum Gentianæ. Eng., Fluidextract of Gentian.

Average Dose.—15 minims (1 mil).

Tinctura Gentianæ Composita. Eng., Compound Tincture of Gentian. Gentian, 100 Gm.; Bitter Orange Peel, 40 Gm.; Cardamom Seed, 10 Gm.; Alcohol, 500 mils; Water and Glycerin, to make 1000 mils.

Average Dose.—1 fluidrachm (4 mils).

Therapeutic Action.—Bitter tonic, stomachic.

Uses.—Employed as a simple bitter, usually in combination with more active agents.

Administration.—The use of Gentian is practically confined to the employment of the Extract in pill masses, and the Compound Tincture as a vehicle. Some combinations are as follows:

In tonic pills or capsules:

℞		or	
Strychninæ Sulph.	gr. ss		030
Arseni Trioxidi	gr. j		065
Ferri Reducti	gr. xxx	2	000
Ext. Gentianæ	q. s.		

M. ft. pil. no. xxx.
Sig.—One after each meal.

Note that in using the extract as an excipient the amount is left to the discretion of the druggist.

Or:

℞		or	
Strychninæ Sulph.	gr. ss		03
Arseni Trioxidi	gr. j		06
Ferri Reducti	gr. xxx	2	00
Ext. Gentianæ	℥ij	8	00

M. ft. cap. no. xxx.
Sig.—One after each meal.

As a bitter tonic:

℞		or	
Tinct. Nucis Vomicæ	f℥iv		15
Tinct. Gentianæ Co.	q. s. f℥iv		120

M.
Sig.—Teaspoonful in water before meals.

℞[1]		or	
Arseni Trioxidi	gr. ij		13
Piperis Pulv.	℥ij	8	00
Ext. Gentianæ	℥ij	8	00

M. ft. cap. no. lx.
Sig.—One after each meal.

In the treatment of tuberculosis:

℞[2]		or	
Creosoti	f℥j		4
Tinct. Gentianæ Comp.	f℥j		30
Alcoholis	q. s. f℥viij		240

M.
Sig.—Teaspoonful in water or milk after meals.

[1] Ohmann-Dumesnil: Diseases of the Skin.
[2] Musser and Kelly: Practical Treatment.

GLUCOSUM.

Latin, Glucosum (Gen., Glucosi). Eng., Glucose. A syrupy product obtained by the incomplete hydrolysis of starch, consisting chiefly of dextrose and dextrins.

Form.—A colorless or slightly colored, thick, syrupy liquid.

Odor and Taste.—Odorless or nearly so, and has a sweet taste.

Solubility.—Very soluble in water, sparingly soluble in alcohol.

Uses.—Chiefly used as a nutrient, and in the treatment of eclampsia, uremia, and kindred conditions.

Administration.—Chiefly by Murphy Drip, usually in about 6 per cent. solutions, and by intravenous infusion in solutions of 30 per cent. or less.

GLYCERINUM.

Latin, Glycerinum (Gen., Glycerini). Eng., Glycerin. Synonym, Glycerol. A liquid obtained by the hydrolysis of vegetable or animal fats or fixed oils.

Form.—A clear, colorless liquid of a syrupy consistence.

Odor and Taste.—Odorless. Sweet taste and producing a sense of warmth upon the mouth and lips.

Solubility.—Miscible with water and alcohol in all proportions.

Incompatibles.—Oxidizing agents such as nitric acid, potassium permanganate, etc.

Average Dose.—1 fluidrachm (4 mils).

Official Preparations.

Suppositoria Glycerini. Eng., Suppositories of Glycerin. Each suppository contains about 3 Gm. (45 grains) of Glycerin. Glycerin is a constituent of all the glycerites and of many other official preparations.

Therapeutic Action.—Laxative, dehydrating agent, antiseptic, emollient.

Uses.—Largely used as a vehicle, solvent and sweetening agent. Used by rectum as a laxative. By vaginal tampons it is used for subinvolution, pelvic congestion, etc. Recommended for renal calculi, chronic constipation and many other conditions. Externally it is used in many lotions and ointments for skin diseases.

Administration.—Glycerin is not often prescribed alone, but is a constituent of many preparations for internal or local use. The following will illustrate:

In the treatment of bronchitis:

℞[1]		or
Tinct. Opii Camph.,		
Spir. Vini Gallici,		
Glycerini	āā. f℥j	30

M.
Sig.—Teaspoonful in water every three hours.

In the treatment of tuberculosis:

℞[2]		or
Creosoti	♏xxiv	1.5
Glycerini	f℥ij	8.0
Tinct. Aurantii Dulc.	q. s. f℥iij	90.0

M.
Sig.—Teaspoonful in water or milk after meals.

In a purgative preparation:

℞[3]		or
Tinct. Nucis Vomicæ	f℥ss	15
Flext. Cascaræ Sagr.	f℥j	30
Glycerini	f℥ss	15
Aquæ Chloroformi	q. s. f℥iij	90

M.
Sig.—Teaspoonful in water after meals.

Locally.—The strong affinity of Glycerin for water makes it a valuable agent in preparations for use as tampons, suppositories, etc.

It is a much-used emollient, and is a constituent of many face lotions, etc. Some combinations of glycerin for local use are shown in the following:

As a local application for chapped hands, etc.:

℞		or
Phenolis Liq.	♏vj	4
Glycerini,		
Alcoholis	āā. f℥j	30.0
Aquæ Rosæ	q. s. f℥iij	90.0

M.
Sig.—Apply after bathing.

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[1] Musser and Kelly: Practical Treatment.
[2] *Ibid.*
[3] Hughes: Practice of Medicine.

Used for cleansing the nose in infectious diseases:

℞[1]		or	
Phenolis Liq.	.....	♏vj	4
Sodii Bicarb.	.....	gr. xxx	2|0
Sodii Boratis	.....	gr. xl	2|5
Glycerini	.....	f℥ij	8|0
Aquæ Dest.	.....q. s.	f℥vj	180|0

M.
Sig.—Spray as directed.

GLYCERITUM—Glycerite.

Glycerites are solutions of medicinal substances in glycerin. They are not often prescribed. The following five glycerites are official:

Glyceritum Acidi Tannici.—See Acidum Tannicum.
Glyceritum Amyli.—See Amylum.
Glyceritum Boroglycerini.—See Acidum Boricum.
Glyceritum Hydrastis.—See Hydrastis.
Glyceritum Phenolis.—See Phenol.

GLYCERYLIS NITRAS.

Latin, Glycerylis Nitras. Eng., Glyceryl Trinitrate—Nitroglycerin.

Average Dose.—1/100 grain (0.0006 Gm.).

The drug as such is not official, but the U. S. P. contains the following:

Spiritus Glycerylis Nitratis. Eng., Spirit of Glyceryl Trinitrate. Synonyms, Spirit of Nitroglycerin, Spirit of Glonoin. A colorless alcoholic solution containing 1 per cent. of Glyceryl Trinitrate.
Average Dose.—1 minim (0.05 mil).

Therapeutic Action.—Vasodilator, circulatory depressant.

Uses.—Employed in the treatment of angina pectoris, asthma, etc.

Administration.—Nitroglycerin is frequently used, but not often prescribed by physicians. Hypodermic tablets containing from 1/50 to 1/200 grain can be obtained for use. In rapidity of action and duration of effect Nitroglycerin stands between Amyl Nitrite and Sodium Nitrite.

[1] Musser and Kelly: Practical Treatment.

GLYCYRRHIZA.

Latin, Glycyrrhiza (Gen., Glycyrrhizæ). Eng., Glycyrrhiza. Synonym, Liquorice. The dried rhizome and roots of *Glycyrrhiza glabra typica* or *Glycyrrhiza glabra glandulifera.*

Average Dose.—30 grains (2 Gm.).

Official Preparations.

Elixir Glycyrrhizæ. Eng., Elixir of Glycyrrhiza (Elixir Adjuvans, U. S. P., VIII). Fluidextract of Glycyrrhiza, 125 mils; Aromatic Elixir, 875 mils.

Extractum Glycyrrhizæ Purum. Eng., Pure Extract of Glycyrrhiza.

Fluidextractum Glycyrrhizæ. Eng., Fluidextract of Glycyrrhiza.
Average Dose.—30 minims (2 mils).

Glycyrrhizinum Ammoniatum. Eng., Ammoniated Glycyrrhizin.
Average Dose.—4 grains (0.25 Gm.).

Mistura Glycyrrhizæ Composita. Eng., Compound Mixture of Glycyrrhiza. Synonym, Brown Mixture. Pure Extract of Glycyrrhiza, 30 Gm.; Syrup, 50 mils; Acacia, 30 Gm.; Camphorated Tincture of Opium, 120 mils; Antimony and Potassium Tartrate, 0.24 Gm.; Spirit of Nitrous Ether, 30 mils; Water, to make 1000 mils.
Average Dose.—2½ fluidrachms (10 mils).

Pulvis Glycyrrhizæ Composita. Eng., Compound Powder of Glycyrrhiza. Senna, 180 Gm.; Glycyrrhiza, 236 Gm.; Washed Sulphur, 80 Gm.; Oil of Fennel, 4 Gm.; Powdered Sugar, 500 Gm.
Average Dose.—1 drachm (4 Gm.).

Glycyrrhiza is a constituent in many other official and N. F. preparations.

Therapeutic Action.—Expectorant, laxative.

Uses.—Sometimes employed in the treatment of cough, bronchitis, etc., and in laxative preparations. It is used to disguise the taste of quinine.

Administration.—To disguise the taste of quinine the Fluidextract and the unofficial Syrup are employed. The Compound Mixture and the Compound Powder are usually prescribed alone.

GOSSYPIUM PURIFICATUM.

Latin, Gossypium Purificatum. Eng., Purified Cotton. Synonym, Absorbent Cotton. The hairs of the seed of *Gossypium herbaceum* or other cultivated species of Gossypium, freed from adhering impurities and deprived of fatty matter.

GRANATUM.

Latin, Granatum. Eng., Pomegranate. The bark of the stem and root of *Punica Granatum.*

Average Dose.—30 grains (2 Gm.).

Official Preparation and Constituent.

Fluidextractum Granati. Eng., Fluidextract of Pomegranate.
Average Dose.—30 minims (2 mils).

Pelletierinæ Tannas. Eng., Pelletierine Tannate. A mixture of the tannates of four alkaloids obtained from Pomegranate. A light-yellow, odorless powder having an astringent taste. Soluble in 240 parts of water or 16 parts of alcohol.
Average Dose.—4 grains (0.25 Gm.).

Therapeutic Action.—Teniafuge and anthelmintic.

Uses.—To remove tapeworms.

Administration.—Usually given in the form of Pelletierine Tannate, which is preferably given in capsules. The success of the treatment seems to largely depend on having the intestinal tract fairly empty before administering the drug, and on following it in from one to two hours with a sufficiently active saline purgative. The treatment is apt to produce temporary dizziness and nausea.

GRINDELIA.

Latin, Grindelia. Eng., Grindelia. The dried leaves and flowering tops of *Grindelia camporum* or *Grindelia cuneifolia,* or of *Grindelia squarrosa.*

Average Dose.—30 grains (2 Gm.).

Official Preparation.

Fluidextractum Grindeliæ. Eng., Fluidextract of Grindelia.
Average Dose.—30 minims (2 mils).

Therapeutic Action.—Expectorant, diuretic, antispasmodic.

Uses.—Recommended for bronchitis, asthma, cystitis, and as a local application for poisoning by ivy. Seldom prescribed.

GUAIACOL.

Latin, Guaiacol (Gen., Guaiacolis). Eng., Guaiacol. One of the chief constituents of Creosote.

Form.—As usually seen, a colorless liquid.

Solubility.—In 53 parts of water. Readily soluble in alcohol, glycerin and oils.

Average Dose.—8 minims (0.5 mil).

Official Preparation.

Guaiacolis Carbonas (Gen., Guaiacolis Carbonatis). Eng., Guaiacol Carbonate. Synonym, Duotal.

Form.—A white powder.

Odor and Taste.—Almost odorless and tasteless.

Solubility.—Insoluble in water, soluble in 60 parts of alcohol.

Average Dose.—15 grains (1 Gm.).

Therapeutic Action.—Antiseptic, germicide, expectorant, antipyretic.

Uses.—Employed in the treatment of phthisis, bronchitis, etc. Locally for tonsillitis, orchitis and adenitis. The carbonate is extensively used as an antirheumatic, particularly in certain forms of arthritis.

Administration.—Guaiacol may be administered by mouth by incorporating with some bland agent, as emulsion of codliver oil or emulsion of petroleum, but for internal administration the carbonate is used almost exclusively. Its comparative freedom from odor and taste renders it easy to take in powders, which is the preferable form for large doses. Small doses are often given in capsules. The local application of guaiacol and the administration of the carbonate are shown in the following prescriptions:

In a local application, as in the treatment of orchitis, lymphangitis, arthritis, etc.:

℞		or	
Guaiacolis	♏xl	2	5
Olei Olivæ	q. s. ℥j	30	0

M.

Sig.—Apply a teaspoonful once daily.

In the treatment of acute bronchitis:

℞[1]		or	
Guaiacolis	ʒss	2	
Olei Gaultheriæ	℥j	4	
Adipis Lanæ Hydr.	q. s. ʒj	30	

M.

Sig.—Apply to chest as directed.

[1] Musser and Kelly: Practical Treatment.

Guaiacol Carbonate may be administered in powders or capsules. While in this way it may be mixed with other agents, it is the custom to order it alone.

In the treatment of "rheumatism":

℞ or
Guaiacolis Carb. ..... gr. cc 13|
Ft. cht. no. xx.
Sig.—One every four hours.

Or:

℞ or
Guaiacolis Carb. ..... gr. clx 10|
Syr. Tolutani .....q. s. f℥ij 60|
M.
Sig.—Teaspoonful every three hours. (Shake-label.)

Or:

℞ or
Guaiacolis Carb. ..... gr. cc 13|
Ft. cap. no. xl.
Sig.—Two (2) every four hours.

GUAIACUM.

Latin, Guaiacum (Gen., Guaiaci). Eng., Guaiac. The resin of the wood of *Guaiacum officinale* or of *Guaiacum sanctum*.

Average Dose.—15 grains (1 Gm.).

Official Preparations.

Tinctura Guaiaci. Eng., Tincture of Guaiac. Represents 20 per cent. of the drug in alcohol.

Average Dose.—1 fluidrachm (4 mils).

Tinctura Guaiaci Ammoniata. Eng., Ammoniated Tincture of Guaiac. Represents 20 per cent. of the drug in Aromatic Spirit of Ammonia.

Average Dose.—30 minims (2 mils).

Therapeutic Action.—Classed as an alterative, diaphoretic, laxative, etc.

Uses.—Recommended for tonsillitis, rheumatism and related conditions. A valuable reagent in testing for blood.

Administration.—Seldom prescribed. The taste is usually considered very disagreeable.

GUARANA.

Latin, Guarana. Eng., Guarana. A dried paste consisting chiefly of the crushed seeds of *Paullinia Cupana*.

Average Dose.—30 grains (2 Gm.).

Official Preparation.

Fluidextractum Guaranæ. Eng., Fluidextract of Guarana.
Average Dose.—30 minims (2 mils).

Therapeutic Action.—Stimulant, diuretic, astringent.

Uses.—Recommended for headache, diarrhea, etc. Seldom used.

HAMAMELIS.

Latin, Hamamelis. Eng., Hamamelis. Synonym, Witchhazel.

Not official, but the U. S. P., ix, contains the following:

Official Preparation.

Aqua Hamamelidis. Eng., Hamamelis Water. Synonyms, Extract of Witchhazel, Distilled Extract of Witchhazel. A saturated aqueous solution obtained by distilling with steam or water the bark, twigs, smaller stems or the entire shrub of *Hamamelis Virginiana:* 15 per cent. of alcohol is added to the distillate.

Therapeutic Action.—Antiseptic and astringent. It is probable that what therapeutic virtue the preparation possesses depends on the alcohol and the tannic acid it contains.

Uses.—A popular household remedy for wounds, infections, insect-bites, etc. Seldom prescribed.

HEXAMETHYLENAMINA.

Latin, Hexamethylenamina (Gen., Hexamethylenaminæ). Eng., Hexamethylenamine. Synonym, Hexamethylene-tetramine, Urotropin. A condensation product of Ammonia and Formaldehyde.

Form.—Small, colorless crystals or white powder.

Odor and Taste.—Odorless, almost tasteless.

Solubility.—In 1.5 parts of water and in 12.5 parts of alcohol.

Incompatibles.—All acids.

Average Dose.—4 grains (0.25 Gm.).

Therapeutic Action.—Diuretic, urinary antiseptic.

Uses.—Employed in the treatment of gonorrhea, cystitis, pyelitis, renal calculi, phosphaturia, typhoid fever, etc. Recom-

mended (?) for argyria, biliary calculi, arthritis, gout, bronchitis, etc.

Administration.—Usually prescribed alone, either in aqueous solution or in the form of tablets to be dissolved in water. While other sizes of tablets may be obtained the 7½-grain are the most popular. It is best to have each dose administered in a glass of water.

The tendency is to administer large doses, and some of our best therapists give as much as 15 grains every three hours.

Some patients cannot tolerate the drug, and even small doses may cause painful micturition or even hematuria. In giving the drug, it is always desirable to have the patient or nurse instructed as to untoward symptoms and discontinue its use upon their appearance.

The simultaneous use of alkalies interferes with the decomposition therefore with the action of the drug.

In solution:

℞ or

Hexamethylenaminæ ..... ʒiv 15

Aquæ ..... q. s. fʒiv 120

M.

Sig.—Teaspoonful in glass of water every four hours.

In tablets:

℞

Tab. Hexamethylenaminæ (7½ gr.) ..... no. xx.

Sig.—One in water every 4 hours.

Patient should be told to break up the tablet, else its solution is sometimes very slow.

HOMATROPINÆ HYDROBROMIDUM.

See Belladonna, p. 87.

HUMULUS.

Latin, Humulus. Eng., Hops. The dried strobiles of *Humulus Lupulus*.

Average Dose.—30 grains (2 Gm.).

Therapeutic Action.—Stomachic, carminative, sedative, antispasmodic.

Uses.—Recommended in the treatment of hysteria, flatulent colic, atonic dyspepsia, alcoholic psychosis, etc. In the form of malt beverages, used to promote appetite and digestion and as a galactagogue for nursing mothers, etc.

HYDRARGYRUM.

Latin, Hydrargyrum. Eng., Mercury. Synonym, Quicksilver.

Incompatibles of Mercurial Salts and Preparations.

The incompatibles of mercurials are so general and the indications for combinations so limited that it is usually better to learn what may than what may not be used with them. Most of the desirable combinations are indicated in the following pages.

Preparations of Metallic Mercury.

HYDRARGYRUM CUM CRETA (Gen., Hydrargyri Cum Creta). Eng., Mercury with Chalk. Synonym, Gray Powder. Contains 38 per cent. of Mercury.

Form.—A gray powder.

Odor and Taste.—Odorless, slightly sweetish taste.

Average Dose.—4 grains (0.25 Gm.).

MASSA HYDRARGYRI (Gen., Massæ Hydrargyri). Eng., Mass of Mercury. Synonyms, Blue Mass, Blue Pill. Contains 33 per cent. of Mercury.

Average Dose.—4 grains (0.25 Gm.).

UNGUENTUM HYDRARGYRI (Gen., Unguenti Hydrargyri). Eng., Mercurial Ointment. Contains 50 per cent. of mercury.

Unguentum Hydrargyri Dilutum. Eng., Blue Ointment. Contains about 30 per cent. of Mercury.

Salts of Mercury and their Preparations.

HYDRARGYRUM AMMONIATUM (Gen., Hydrargyri Ammoniati). Eng., Ammoniated Mercury. Synonym, White Precipitate. Contains about 80 per cent. of Mercury.

Form.—White pieces or powder.

Odor and Taste.—Odorless and having a metallic taste.

Solubility.—Insoluble in water or alcohol.

Unguentum Hydrargyri Ammoniati. Eng., Ointment of Ammoniated Mercury. Contains 10 per cent. of Ammoniated Mercury.

HYDRARGYRI CHLORIDUM CORROSIVUM (Gen., Hydrargyri Chloridi Corrosivi). Eng., Corrosive Mercuric Chloride. Synonyms, Corrosive Sublimate, Bichloride of Mercury, etc.

Form.—Heavy, colorless crystals or crystalline masses.

Odor and Taste.—Odorless; an acrid, metallic taste.

Solubility.—In 13.5 parts of water or 3.8 parts of alcohol. More readily soluble in the presence of ammonium chloride.

Average Dose.—1/20 grain (0.003 Gm.).

HYDRARGYRI CHLORIDUM MITE (Gen., Hydrargyri Chloridi Mitis). Eng., Mild Mercurous Chloride. Synonyms, Calomel, Mercurous Chloride, Subchloride of Mercury.

Form.—White or yellowish-white powder.

Odor and Taste.—Odorless and tasteless.

Solubility.—Insoluble in water or alcohol.

Average Dose.—Laxative—2½ grains (0.15 Gm.). Alterative—¼ grain (0.015 Gm.).

HYDRARGYRI IODIDUM FLAVUM (Gen., Hydrargyri Iodidi Flavi). Eng., Yellow Mercurous Iodide. Synonyms, Protiodide of Mercury, Green Iodide of Mercury, Mercurous Iodide.

Form.—A yellow powder.

Odor and Taste.—Odorless and tasteless.

Solubility.—Almost insoluble in water. Insoluble in alcohol.

Average Dose.—1/6 grain (0.01 Gm.).

HYDRARGYRI IODIDUM RUBRUM (Gen., Hydrargyri Iodidi Rubri). Eng., Red Mercuric Iodide. Synonym, Biniodide of Mercury, Mercuric Iodide.

Form.—Red powder.

Odor and Taste.—Odorless and tasteless.

Solubility.—Almost insoluble in water. Soluble in 115 parts of alcohol.

Average Dose.—1/20 grain (0.003 Gm.).

Liquor Arseni et Hydrargyri Iodidi.—See Arsenum, p. 75.

HYDRARGYRI OXIDUM FLAVUM (Gen., Hydrargyri Oxidi Flavi). Eng., Yellow Mercuric Oxide.

Form.—A yellowish powder.

Odor and Taste.—Odorless, metallic taste.

Solubility.—Almost insoluble in water. Insoluble in alcohol.

Unguentum Hydrargyri Oxidi Flavi. Eng., Ointment of Yellow Mercuric Oxide. Contains 10 per cent. of Yellow Mercuric Oxide.

Oleatum Hydrargyri. Eng., Oleate of Mercury. Represents 25 per cent. of Yellow Mercuric Oxide.

HYDRARGYRI OXIDUM RUBRUM (Gen., Hydrargyri Oxidi Rubri). Eng., Red Mercuric Oxide. Synonym, Red Precipitate.

Form.—Heavy, red crystalline powder.

Odor and Taste.—Odorless, metallic taste.

Solubility.—Almost insoluble in water. Insoluble in alcohol.

HYDRARGYRI SALICYLAS (Gen., Hydrargyri Salicylatis). Eng., Mercuric Salicylate.

Form.—A white or nearly white powder.

Odor and Taste.—Odorless and tasteless.

Solubility.—Nearly insoluble.

Average Dose.—1/15 grain (0.004 Gm.).

UNGUENTUM HYDRARGYRI NITRATIS. Eng., Ointment of Mercuric Nitrate. Synonym, Citrine Ointment.

The official Tablets of Corrosive Mercuric Chloride, commonly called Bichloride Tablets or Antiseptic Tablets, are extensively used.

They contain about 7.3 grains of the mercuric salt with some agent or agents to facilitate solubility. They may be white or contain coloring matter. It is desirable to use those of odd shape and color, and in a distinctive style of package, so as to avoid error. They should not be prescribed for patients' use, except in original packages (if at all). These should not be confused with the "Alkaline Antiseptic Tablets," used in making mild sprays and gargles.

Therapeutic Action.—The salts and preparations of mercury are generally alterative, antisyphilitic and germicide. Mass of Mercury, Mercury with Chalk, and the Mild Chloride are particularly purgative. The Ointment of the Nitrate, the Red Iodide and some others are active irritants.

Uses.—The employment of the salts and preparations of mercury covers almost the entire realm of medicinal treatment. They are particularly used for syphilis in all of its forms and stages; as purgatives in the early stages of acute diseases, such as intestinal indigestion, typhoid fever, pneumonia, etc.; for parasitic diseases, ulcers, impetigo, etc. Extensively employed as wet or dry antiseptic dressings, etc.

Toxicology (Mercurialism—Hydrargyrism).—Mercury poisoning may be acute, subacute, or chronic. A common form of acute poisoning is that occasioned by taking an excess of some poisonous mercuric salt, usually the corrosive mercuric chloride tablets. This is frequently done with suicidal intent or by error, as mistaking them for headache tablets. The patient may have intense pain, particularly in the epigastric region, and usually purging, tenesmus and bloody stools. Nausea and vomiting may or may not occur. The treatment is to wash out the stomach, preferably with water containing milk or the white of eggs, and, when this has been done, to leave a large excess of the albuminous matter in the stomach. Morphine may be used for the abdominal symptoms, and the patient otherwise treated symptomatically.

A subacute mercurialism may develop from one or a few doses of a mercurial given as a purgative or in an effort to rapidly produce results, as in the treatment of syphilis. It should be

emphasized that "salivation" from a simple calomel purge is now extremely rare. Like human hydrophobia, it is often heard of, but seldom observed. Its rarity may, in part, be due to the quality of the drug as now marketed. The usual toxic symptoms are fetid breath, disagreeable taste, swollen gums and a profuse flow of saliva. There may be lesions on the gums or elsewhere and the teeth become loose or even fall out. There may be abdominal pain, purging and bloody stools. The treatment is to discontinue the mercury, give opiates and demulcents if necessary for the intestinal symptoms, and use mouth-washes for the local lesions. Probably the best mouth-wash is one containing potassium chlorate, tincture of myrrh and tincture of belladonna leaves. Belladonna internally is frequently used to advantage. Potassium iodide used with proper care has been recommended.

A purely chronic mercurialism may develop from the continued use of the drug or in those whose work exposes them to it. The symptoms resemble those just described, but it is more apt to be characterized by necrosis of bone and cachexia.

Administration.—Care should be exercised that irritating or poisonous compounds are not formed. Particular consideration should be given when the patient is taking iodides, and in making local applications of mercuric salts they should not come in contact with iodine. Some of the common uses and methods of employment are indicated in the following:

By Mouth.—As a purgative the Mild Mercurous Chloride, Mercury with Chalk and sometimes Mass of Mercury are the preparations used. For children, the first two are employed, usually combined with sugar of milk and administered in powders. For adults, the Mild Mercurous Chloride is the preparation of choice, though the others are used. It may be administered with sugar or sugar of milk, in powder or capsules. A more common method is a combination with some other purgatives put into capsules. Among the other agents used are such as Phenolphthalein, Podophyllin, Compound Extract of Colocynth, Rhubarb, Inspissated Oxgall, etc. Strychnine and sometimes Atropine are also used. Extract of Hyoscyamus and Powder of Ipecac and Opium are very often associated in these mixtures to prevent griping.

Some combinations are shown in the following:

As an initial purge in the treatment of grip, etc.; also in alcoholism:

℞		or
Atropinæ Sulph.	gr. $\frac{1}{100}$	0006
Strychninæ Sulph.	gr. $\frac{1}{20}$	0030
Hydrarg. Chlor. Mitis	gr. v	3200
Ext. Cascaræ Sag.	gr. vj	4000

M. ft. cap. no. ij.
Sig.—One every hour.

As a purgative:

℞		or
Hydrarg. Chlor. Mitis, Ext. Fel. Bovis, Rhei Pulv.	āā. gr. v	320
Ext. Hyoscyami	gr. j	065

M. ft. cap. no. iij.
Sig.—One every hour.

Or:

℞		or
Hydrarg. Chlor. Mitis, Phenolphthaleini, Rhei Pulv.	āā. gr. v	3

M. ft. cap. no iij.
Sig.—Take an hour apart.

As a laxative in tuberculosis:

℞[1]		or
Mas. Hydrargyri, Aloes Pulv., Ipecacuanhæ Pulv., Capsici Pulv.	āā. gr. xij	8

M. ft. cap. no. xxiv.
Sig.—One at night.

As a purgative (for child 2 years old):

℞		or
Hydrarg. Chlor. Mitis	gr. j	065
Sacchari Lactis	gr. xxx	2000

M. ft. cht. no. v.
Sig.—One every half-hour.

When nausea and vomiting are factors this is often put into ten powders and one given every fifteen minutes.

[1] Musser and Kelly: Practical Treatment.

In the treatment of acid intoxication of infancy:

℞		or
Hydrarg. Chlor. Mitis	gr. ij	15
Sodii Bicarbonatis	gr. cc	13 00

M. ft. cht. no. xx.
Sig.—One every three hours till relieved.

As an alterative, antisyphilitic, etc., the preparations most commonly used are the Yellow Mercuric Iodide, the Red Mercuric Iodide, the Corrosive Mercuric Chloride, and the Mild Mercurous Chloride. The Red Mercuric Iodide and the Corrosive Mercuric Chloride are more frequently prescribed in solution with potassium iodide when the soluble Potassio-mercuric Iodide is formed.

The Yellow Mercurous Iodide is usually prescribed in the ready prepared gelatin-coated pills, which may be obtained in almost any size. The ⅓, ¼, and ⅕ grain are the most popular. An advantage is the facility for increasing or decreasing the dose.

In the treatment of syphilis:

℞	
Pil. Hydrarg. Iod. Flav. (¼ gr.)	no. c.

Sig.—One before each meal.

In the treatment of congenital syphilis:

℞		or
Hydrarg. cum Creta	gr. iij	2
Sacchari Lactis	ʒj	4 0

M. ft. cht. no. xxx.
Sig.—One three times a day.

The mild mercurous chloride is often prescribed in the same dose.

In the treatment of syphilis:

℞		or
Hydrarg. Chlor. Corros.	gr. ij	13
Potassii Iodidi	ʒj	30 00
Aquæ Dest.	q. s. fʒj	30 00

M. ft. sol.
Sig.—Begin with five (5) drops as directed.

The patient is usually instructed to take this one hour before or two hours after meals. It is best given in a small amount of water, and a glass of milk taken after. The drops are increased to desired dosage.

In the treatment of syphilis in the tertiary stage:

℞[1]

		or
Hydrarg. Iod. Rub.	gr. iv	26
Potassii Iodidi	ʒj	30 00
Aquæ Dest. q. s.	fʒvj	180 00

M.

Sig.—Teaspoonful in water after meals.

In the treatment of syphilis in infants:

℞[2]

		or
Hydrarg. Chlor. Corros.	gr. j	065
Potassii Iodidi	3ij	8 000
Syr. Zingiberis	fʒj	30 000
Aquæ q. s.	fʒij	60 000

M.

Sig.—Five (5) drops in milk three times a day.

In the treatment of anemia:

℞

		or
Hydrarg. Chlor. Corros.	gr. ij	13
Liq. Acidi Arsenosi	fʒij	8 00
Tinct. Ferri Chlor., Acidi Hydrochlor. Dil., Glycerini āā.	fʒj	30 00
Aquæ Dest. q. s.	fʒvj	180 00

M.

Sig.—Teaspoonful in water after meals.

This is known under the popular name of Elixir Four Chlorides.

As a postoperative tonic:

℞[3]

		or
Hydrarg. Chlor. Corros., Arseni Trioxidi āā.	gr. j	065
Ext. Nucis Vomicæ	gr. xxv	1 600
Ferri et Quin. Cit.	gr. cc	13 000

M. ft. cap. no. c.

Sig.—One after each meal.

Intravenously and Hypodermatically.—The corrosive mercuric chloride or the red mercuric iodide are used in solution or salts as the mild chloride or the salicylate are used in suspension. The aseptic ampoules are probably the most desirable form, but the following illustrate some prescriptions used:

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[1] Musser and Kelly: Practical Treatment.
[2] *Ibid.*
[3] Ashton: Practice of Gynecology.

For intravenous use in the treatment of syphilis:

℞[1]		or
Hydrarg. Chlor. Corros.	gr. j	065
Sodii Chloridi	gr. iij	200
Aquæ Destillatæ q. s.	f℥ij	60 000

M.

Sig.—Formula. (Poison-label.)

(From 20 to 60 minims well diluted are given daily.)

For hypodermic use in the treatment of syphilis:

℞[2]		or
Hydrarg. Chlor. Corros.	gr. ivss	30
Sodii Chloridi	gr. iiiss	23
Aquæ Destillatæ q. s.	f℥j	30 00

M.

Sig.—One per cent. solution corrosive mercuric chloride.

(10 to 30 minims are used at each injection.)

By Inunction.—Mercurial Ointment is the preparation of choice. It is usually considered too strong to be used undiluted, but the official diluted ointment being made with Petrolatum is not as desirable as the stronger preparation diluted with some agent, as Hydrous Wool Fat. The ointment may be ordered in bulk or put into papers. Paraffine paper is used.

Written instructions should be given the patient as to method of use. The most common is to instruct patients to take a hot bath each night, then apply the given amount of the ointment and massage until absorption is effected. The right axillary region (below the hair) may be used one night, the next night the left, then the inner side of the right thigh, then the left, then the axillary region, etc., in the same order. This will rarely cause local symptoms of an unpleasant character.

Some desirable methods of prescribing are shown in the following:

℞		or
Ung. Hydrargyri,		
Adipis Lanæ Hyd.	āā. f℥j	30

M. ft. cht. cer. no. xvj.

Sig.—Use one each night as directed.

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[1] White and Martin: Genito-urinary and Venereal Diseases.

[2] *Ibid.*

When economy is a factor this may be ordered, as:

℞		or	
Ung. Hydrargyri,			
Adipis Lanæ Hyd.	āā.	ʒj	30

M.
Sig.—Use level teaspoonful each night.

Inhalation and Fumigation.—In general practice mercury is seldom prescribed in this way. The Mild Mercurous Chloride is the salt usually employed. Separate instructions are given the patient as to bath, use of cabinet or blanket, supply of aqueous vapor, etc.

Locally, in Solutions.—The Corrosive Mercuric Chloride is most commonly used. As an antiseptic or germicide it is considered by some as very desirable to prescribe it in acid solution to retard the formation of the insoluble albuminate. Tartaric Acid is most frequently employed. Tablets are on the market containing enough of the Corrosive Chloride (about 7.3 grains) to make a 1 : 1000 solution when 1 tablet is added to a pint of water. They also contain Ammonium Chloride or Tartaric Acid, etc. They are convenient for the practitioner, but they are rather dangerous to be prescribed under ordinary circumstances.

Some desirable formulæ are shown in the following:

As a wet dressing:

℞		or	
Hydrarg. Chlor. Corros.		gr. iv	26
Acidi Tartarici		gr. xx	1 30
Aquæ Destillatæ	q. s.	ʒiv	120 00

M.
Sig.—Use 1 part to 10 parts of water to wet dressing. (Poison-label.)

In the treatment of tinea versicolor:

℞[1]		or	
Hydrarg. Chlor. Corros.		gr, iv	26
Ammonii Chloridi		ʒss	2 00
Alcoholis		fʒvj	22 00
Aquæ Rosæ	q. s.	fʒvj	180 00

M.
Sig.—Apply frequently. (Poison-label.)

[1] Hughes: Practice of Medicine.

As a mouth-wash in the treatment of the mucous patches of syphilis:

℞[1]		or	
Hydrarg. Chlor. Corros.	gr. j		065
Mellis Rosæ	f℥ij	60	000
Aquæ Destillatæ ..... q. s.	f℥vj	180	000

M.

Sig.—Use as a mouth-wash.

In the treatment of gonorrhea:

℞[2]		or	
Hydrarg. Chlor. Corros.	gr. ss		03
Phenolis	gr. xij		80
Zinci Phenolsulph.	gr. xxx	2	00
Glyc. Boroglycerini	f℥j	30	00
Aquæ Destillatæ ..... q. s.	f℥vj	180	00

M.

Sig.—Use as directed. (Not to be taken.)

Patient should be instructed to inject after urination.

In the treatment of the local lesions of diphtheria:

℞[3]		or	
Hydrarg. Chlor. Corros.	gr. ss		03
Tinct. Ferri Chlor.	f℥ij	8	00
Glycerini	f℥ss	15	00
Aquæ Dest. ..... q. s.	f℥iij	90	00

M.

Sig.—Teaspoonful in water every two hours.

In Dusting Powders.—The Mild Mercurous Chloride is the salt most commonly used. It is prescribed alone or with other agents. The following will illustrate:

In the treatment of impetigo, "fever blisters," etc.:

℞		or	
Hydrarg. Chlor. Mitis	3j		4
Bismuthi Subnitratis	3vij		26

M.

Sig.—Apply three times a day.

In Ointments.—The Mild Chloride, Yellow Oxide and Ammoniated Mercury are more frequently employed. When some irritant or decidedly stimulating action is desired (as in the indolent

[1] White and Martin: Genito-urinary and Venereal Diseases.
[2] *Ibid.*
[3] Hughes: Practice of Medicine.

syphilitic lesions) the Ointment of Mercuric Nitrate, properly diluted, is used.

In ordering the Yellow Oxide in ointments it is particularly desirable to see that the salt is in a state of minute subdivision and thoroughly incorporated with the vehicle, else an irritant effect may be produced.

Some strengths and combinations are shown in the following:

In the treatment of eczema of the scalp of infancy:

℞		or
Hydrarg. Chlor. Mitis	ʒss	2
Petrolati	q. s. fʒj	30

M.
Sig.—Apply twice daily.

In the treatment of the skin lesions of smallpox:

℞[1]		or
Phenolis	gr. x	65
Hydrarg. Chlor. Mitis	gr. xv	1 00
Amyli,		
Zinci Oxidi	āā. ʒij	8 00
Petrolati	q. s. ʒj	30 00

M.
Sig.—Apply as directed.

Or:

℞[2]		or
Hydrarg. Ammoniati	gr. x	65
Amyli,		
Zinci Oxidi	āā. ʒij	8 00
Petrolati	q. s. ʒj	30 00

M.
Sig.—Apply as directed.

In the treatment of the skin lesions of syphilis:

℞[3]		or
Hydrarg. Ammoniati	gr. xx	1 3
Ung. Aquæ Rosæ	q. s. ʒj	30 0

M.
Sig.—Apply as directed.

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[1] Musser and Kelly: Practical Treatment.
[2] *Ibid.*
[3] White and Martin: Genito-urinary and Venereal Diseases.

Used in the treatment of the cutaneous lesions of hereditary syphilis:

℞[1]

		or
Hydrarg. Ammoniati	gr. xv	1
Ung. Zinci Oxidi	ʒj	30

M.
Sig.—Apply as directed.

In the treatment of indolent ulcers:

℞

		or
Ung. Hydrarg. Nitr.	ʒij	8
Petrolati	ʒvj	22

M.
Sig.—Apply as directed.

In the treatment of inflamed lids, etc.:

℞

		or
Hydrarg. Oxidi Flavi	gr. j	065
Petrolati	q. s. ʒj	4 000

M. tere bene.
Sig.—Apply twice daily.

HYDRASTIS.

Latin, Hydrastis (Gen., Hydrastis). Eng., Hydrastis. Synonyms, Golden Seal, Yellow Root. The rhizome and roots of *Hydrastis canadensis.*

Principal Constituents.—Hydrastine (about 2.5 per cent.), Berberine, etc.

Average Dose.—30 grains (2 Gm.).

Official Preparations, Alkaloids and Salt.

Extractum Hydrastis. Eng., Extract of Hydrastis. A powdered extract about four times the strength of the drug.
Average Dose.—8 grains (0.5 Gm.).

Fluidextractum Hydrastis. Eng., Fluidextract of Hydrastis.
Average Dose.—30 minims (2 mils).

Glyceritum Hydrastis. Eng., Glycerite of Hydrastis.
Average Dose.—30 minims (2 mils).

Tinctura Hydrastis. Eng., Tincture of Hydrastis.
Average Dose.—1 fluidrachm (4 mils).

Hydrastina. Eng., Hydrastine. An alkaloid obtained from Hydrastis or prepared synthetically.
Average Dose.—1/15 grain (0.01 Gm.).

[1] Musser and Kelly: Practical Treatment.

Hydrastinæ Hydrochloridum. Eng., Hydrastine Hydrochloride.
Average Dose.—⅙ grain (0.01 Gm.).

Hydrastininæ Hydrochloridum. Eng., Hydrastinine Hydrochloride. The hydrochloride of an artificial alkaloid derived from Hydrastine.
Form.—Yellowish needles or powder.
Odor and Taste.—Odorless; bitter taste.
Solubility.—Soluble in water and alcohol.
Average Dose.—½ grain (0.03 Gm.).

Unofficial Preparation.

Hydrastinum. Eng., Hydrastin. An impure mixture of alkaloids, resin, etc.
Average Dose.—5 grains (0.3 Gm.).
This should now be replaced by the Extract of Hydrastis.

The unofficial Aqueous Fluidextract of Hydrastis is extensively used. It is miscible with water.

Therapeutic Action.—Astringent, antiseptic, bitter tonic. Said to be hemostatic in uterine hemorrhage.

Uses.—Principally employed in genito-urinary conditions, as gonorrhea, menorrhagia and metrorrhagia; also for chronic gastritis, intestinal indigestion, diarrhea, etc.

Administration.—Care should be exercised to distinguish between the impure Hydrastin and the alkaloid Hydrastine or Hydrastinine Hydrochloride. Mistakes have occurred both on the part of the prescriber and the compounder. The Fluidextract, Hydrastinine Hydrochloride and Hydrastin are the preparations most frequently employed. The alkaloids are not usually recommended for gastric disturbances or in local applications. All of these preparations will stain the skin or clothing.

Some combinations are as follows:

In the treatment of menorrhagia, metrorrhagia, etc.:

℞[1]		or	
Strychninæ Sulph.	gr. ss		03
Hydrastininæ Hydrochl.	gr. x		65
Extracti Ergotæ	gr. xl	2	50

M. ft. cap. no. xx.
Sig.—One two hours after meals.

[1] Ashton: Practice of Gynecology.

Or:

℞		or
Flext. Hydrastis,		
Flext. Ergotæ	āā. f℥j	30
Tinct. Nucis Vomicæ	f℥iv	15
Tinct. Aurantii Dulc.	q. s. f℥iv	120
M.		

Sig.—Teaspoonful in water after meals.

Note that the fluidextract is dispensed in an alcoholic vehicle to prevent precipitation. This preparation is of distinctly disagreeable taste, and capsules are usually considered preferable.

As an injection in the treatment of gonorrhea:

℞		or
Hydrastinæ Sulph.,		
Morphinæ Sulph.,		
Quininæ Bisulph.	āā. gr. viij	5
Muc. Acaciæ	q. s. f℥viij	240
M.		

Sig.—Use as directed. (Not to be taken.)

This constitutes the "Hot Springs Remedy" extensively used in some localities.

HYOSCYAMUS.

Latin, Hyoscyamus (Gen., Hyoscyami). Eng., Hyoscyamus. Synonym, Henbane. The dried leaves and flowering or fruiting tops of *Hyoscyamus niger*.

Principal Constituents.—Hyoscine, Hyoscyamine, etc.

Contains not less than 0.065 per cent. of the Alkaloids of Hyoscyamus.

Average Dose.—4 grains (0.25 Gm.).

Official Preparations and Alkaloidal Salts.

Extractum Hyoscyami. Eng., Extract of Hyoscyamus. A soft solid about four times the strength of the drug.

Average Dose.—1 grain (0.06 Gm.).

Fluidextractum Hyoscyami. Eng., Fluidextract of Hyoscyamus.

Average Dose.—3 minims (0.2 mil).

Tinctura Hyoscyami. Eng., Tincture of Hyoscyamus. Represents 10 per cent. of the drug in diluted alcohol.

Average Dose.—30 minims (2 mils).

HYOSCYAMINÆ HYDROBROMIDUM. Eng., Hyoscyamine Hydrobromide. The hydrobromide of an alkaloid obtained from Hyoscyamus and other related plants.

Solubility.—Soluble in water or alcohol.

Average Dose.—1/200 grain (0.0003 Gm.).

Therapeutic Action.—Sedative, antispasmodic, anodyne, deliriant and mydriatic.

Uses.—Principally employed as antispasmodic for whooping-cough, asthma, croup, etc. Used in combination with other agents for hysteria; alcoholic psychosis and related conditions. A common constituent in purgative preparations to prevent griping. Hyoscine is employed in the treatment of alcoholism.

Administration.—Extract of Hyoscyamus is more frequently used in the form of the unofficial powdered extract.

The tincture is the preparation used in fluid combinations.

The alkaloidal salt is sometimes used by physicians, but seldom prescribed, and frequently disappointing.

In the treatment of palpitation in hysterical subjects:

℞[1]		or	
Strychninæ Sulph.	gr. 1/8		02
Zinci Valeratis	gr. x		65
Ext. Sumbul	gr. x		65
Ext. Hyoscyami	gr. v		32

M. ft. cap. no. x.

Sig.—One after each meal.

In a purgative mixture, to prevent griping:

℞		or	
Hydrarg. Chlor. Mitis,			
Rhei Pulv.,			
Ext. Fel. Bovis	āā gr. v		320
Ext. Hyoscyami Pulv.	gr. j		065

M. ft. cap. no. iij.

Sig.—One every hour.

In the treatment of colds, etc.:

℞		or	
Acetphenetidini	gr. xxx	2	0
Ammonii Carb.	gr. xx	1	3
Tinct. Hyoscyami	f℥j	4	0
Mellis Depur.	f℥iss	45	0
Spir. Vini Gallici	q. s. f℥iij	90	0

M.

Sig.—(Shake-label).

Tablespoonful in water every four hours.

[1] **Anders: Practice of Medicine.**

This does not make an elegant-looking mixture, but seems to be clinically of value.

As a sedative in the treatment of violent cough:

℞		or	
Heroinæ Hydrochlor.	gr. j		065
Ammonii Chlor.	3j	4	000
Tinct. Hyoscyami	f3iij	12	000
Syr. Pruni Virg.	q. s. f3ij	60	000

M.

Sig.—Teaspoonful every two hours till relieved.

In the treatment of cough:

℞[1]		or	
Codeinæ Sulph.	gr. iij		2
Tinct. Hyoscyami	f3iij	12	0
Syr. Tolutani	f3ss	15	0
Aquæ	q. s. f3iij	90	0

M.

Sig.—Teaspoonful every three hours.

In the treatment of cystitis, whooping-cough, etc.:

℞[2]		or	
Tinct. Hyoscyami	f3ss		2
Potassii Citratis	3j		4
Aquæ	q. s. f3iv	120	

M.

Sig.—Teaspoonful in water every three hours.

In a sedative mixture:

℞		or	
Chlorali Hydrati	3j		4
Sodii Bromidi	3ij		8
Tinct. Hyoscyami	f3ij		8
Aquæ Chloroformi	q. s. f3j	30	

M.

Sig.—Teaspoonful every four hours till relieved.

HYPOPHYSIS SICCA.

Latin, Hypophysis Sicca. Eng., Desiccated Hypophysis. Synonym, Desiccated Pituitary Body.

The posterior lobe obtained from the pituitary body of cattle, cleaned, dried and powdered. A yellowish or grayish amorphous powder having a characteristic odor. It is only partially soluble in water.

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[1] Musser and Kelly: Practical Treatment.

[2] Ruhrah: Diseases of Children.

Average Dose.—½ grain (0.03 Gm.).

Official Preparation.

Liquor Hypophysis. Eng., Solution of Hypophysis.
Average Dose.—15 minims (1 mil).

Uses.—Used to promote uterine pains in labor and to contract the uterus after delivery; also for tympanites, and many other conditions.

Administration—Principally used by needle. The aseptic ampoules of the solution are employed almost exclusively. It is extensively used under the proprietary name of Pituitrin.

ICHTHYOL.

(*Not Official.*)

Latin, Ichthyol (Gen., Ichthyolis). Eng., Ichthyol (Ammonium Ichthyosulphonate).

Form.—A thick, brown liquid.

Odor.—Bituminous, disagreeable.

Solubility.—Readily soluble in water or glycerin.

Incompatibles.—Acids, alkali hydroxides or carbonates, alkaloids, potassium iodide, mercury bichloride, resorcin.

Therapeutic Action.—Said to be antiphlogistic, anodyne, alterative, antigonorrheal, antiseptic.

Uses.—Recommended for phthisis, rheumatism, scrofula, nephritis, gonorrhea, inflammations and various skin diseases.

Administration.—While ichthyol is recommended for internal administration, by far the most common employment is local. It is used in ointments or in solution in water or glycerin. It mixes readily with the usual ointment bases.

To disguise the odor in ointments, use 1 drop each of the Oil of Bergamot and Oil of Eucalyptus to each drachm of Ichthyol. One drop of Oil of Citronella to the drachm of Ichthyol is frequently employed. Some also add 1 drop of Oil of Rose in addition to the Oil of Citronella.

In prescribing less than two fluidrachms of Ichthyol, it is advisable to prescribe by weight, as small quantities are not conveniently measured.

Some combinations are shown in the following:

As an application on vaginal tampons:

℞		or
Ichthyolis	f℥ij	8
Glyc. Boroglycerini	q. s. f℥iv	120

M.
Sig.—For office use.

In the treatment of furuncle:

℞[1]		or
Ichthyolis	℥j	4
Empl. Plumbi	℥ij	8
Empl. Resinæ	℥j	4

M.
Sig.—Apply as directed.

In the treatment of mastitis, orchitis, lymphadenitis, etc.:

℞		or
Camphoræ	℥ss	2
Ichthyolis,		
Ung. Belladon.	āā. ℥ij	8
Petrolati	q. s. ℥j	30

M.
Sig.—Apply twice a day.

IODOFORMUM.

Latin, Iodoformum. Eng., Iodoform. Formula, CHI_3.

Form.—A lemon-yellow powder or crystals.

Odor and Taste.—A peculiar, very penetrating and persistent odor, and an unpleasant, slightly sweetish and iodine-like taste.

Solubility.—Almost insoluble in water. Soluble in 60 parts of alcohol.

Average Dose.—4 grains (0.25 Gm.).

Official Preparation.

Unguentum Iodoformi. Eng., Iodoform Ointment. Contains 10 per cent. of the drug.

Therapeutic Action.—Probably a mild antiseptic and local analgesic.

Uses.—Principally as a dressing for wounds and various local lesions, particularly if of a syphilitic or tuberculous character.

[1] Stelwagon: Diseases of the Skin.

Administration—The odor renders the drug particularly objectionable. As a dressing it is usually applied dry or by means of the five or ten per cent. iodoform gauze. Sometimes used in the form of ointments, or suspensions.

IODUM.

Latin, Iodum (Gen., Iodi). Eng., Iodine. Synonym, Resublimed Iodine. A solid element, at one time largely obtained from the ashes of seaweed, known as Kelp, now chiefly from the niter beds of South America.

Form.—Heavy, bluish-black plates of a metallic luster.

Odor and Taste.—A distinctive, penetrating odor; a sharp, acrid taste.

Solubility.—In about 2950 parts of water; in 12.5 parts of alcohol. More soluble in the presence of Potassium Iodide.

Incompatibles.—Alkaloids, ammonia, mineral acids, tannic acid, oil of turpentine, starch, vegetable colors, etc.

Average Dose.—1/12 grain (0.005 Gm.).

Official Preparations.

Liquor Iodi Compositus. Eng., Compound Solution of Iodine. Synonym, Lugol's Solution. Iodine, 5 Gm.; Potassium Iodide, 10 Gm.; Water, to make 100 mils.

Average Dose.—3 minims (0.2 mil).

Tinctura Iodi. Eng., Tincture of Iodine. Synonym, Compound Tincture of Iodine. Iodine, 70 Gm.; Potassium Iodide, 50 Gm.; Water, 50 mils; Alcohol, to make 1000 mils.

Average Dose.—1½ minims (0.1 mil).

Unguentum Iodi. Eng., Iodine Ointment. Iodine, 4 Gm.; Potassium Iodide, 4 Gm.; Glycerin, 12 Gm.; Benzoinated Lard, 80 Gm.

Therapeutic Action.—Germicide, irritant, alterative, resolvent.

Uses.—Sometimes used in the treatment of goiter, typhoid fever, diarrhea, vomiting, etc. Locally, it is used for disinfecting the skin for surgical work and for disinfecting fresh wounds, abscesses, etc.; also used as an application for toothache, tonsillitis, ulcers, adenitis, erysipelas, and superficial infections generally. Used as a counterirritant in pleurisy and many other conditions. Sometimes used by inhalation for bronchitis, etc.

Toxicology.—Chronic iodine poisoning is discussed under "Iodides." Acute iodine poisoning is usually evidenced by the characteristic discoloration of the mucous membrane of the

mouth and throat. The treatment consists in administering starch or, if that is inaccessible, a dilute solution of ammonia. Demulcent drinks should be given freely. If the quantity of the drug taken is large, emesis should be induced.

Administration.—The Tincture is the preparation most commonly used. It is usually prescribed alone. The present official tincture, which contains Potassium Iodide, is freely miscible with either water or alcohol. Before the U. S. P., viii, the tincture of iodine did not contain potassium iodide; so it was insoluble in water to any appreciable extent. This caused many to order a tincture containing the iodide which was unofficial; it is the same as the present tincture of iodine, but was then called the compound tincture. It will be seen, therefore, that there is now no "compound tincture," known as such. Somewhat similar misunderstanding sometimes occurs relative to the old "resublimed iodine." All "iodine" is now resublimed. Therefore to prescribe the "compound" tincture of iodine or "resublimed" iodine is unnecessary, and shows a lack of knowledge of present conditions.

The pure tincture of iodine is rather strong for common use, and many institutions dilute it one-half as a routine measure. If the undiluted tincture is applied to the skin several days in succession it will often irritate, or even blister.

Much of the blistering resulting from the local application of iodine is due to the presence of some dressing or application containing a mercuric salt, the red mercuric iodide (a powerful irritant) being formed.

When a bottle containing the tincture of iodine is left open the alcohol evaporates more rapidly than the iodine; so there is a concentration of the solution, and this may take place to where one application will blister.

When the tincture is carried for some time in a cork-stoppered bottle, sufficient of the cork may be acted upon and dissolved to interfere with obtaining a clear solution when the preparation is added to water. Some frequently used prescriptions are shown in the following:

As a local application in the treatment of tonsillitis, inflamed glands, abscess, furuncle, insect-bite, inflamed joints, etc.:

℞ or

Tincturæ Iodi ..... f℥j 30|

Sig.—Apply once daily as directed. (Poison-label.)

Or, better still is the following, known by the dentists as "Iodine and aconite":

℞		or
Tincturæ Iodi,		
Tincturæ Aconiti	āā f℥ss	15

Sig.—Apply twice a day as directed. (Poison-label.)

It may usually be applied to the skin several days before too much local irritation develops.

This is also extensively used in the treatment of toothache.

As a local application for tonsillitis, etc.; also for clavus:

℞		or
Phenolis Liq.	♏xxv	1|5
Tinct. Iodi	f℥iv	15|0
Glycerini	q. s. f℥j	30|0

M.

Sig.—Apply as directed.

As an application to mucous membrane:

℞[1]		or
Iodi	gr. j	|065
Potassii Iodidi	gr. xx	1|300
Glycerini	q. s. f℥j	30|000

M.

Sig.—Apply as directed.

Iodine is sometimes used internally in the treatment of goiter:

℞		or
Iodi	gr. ij	|13
Potas. Iodidi	gr. viij	|50
Alcoholis	f℥j	4|00
Glycerini	f℥iv	15|00
Aquæ	q. s. f℥ij	60|00

M.

Sig.—Teaspoonful in water after meals.

As a vaginal douche in vaginitis, endometritis, ovaritis, salpingitis, etc.:

℞		or
Tinct. Iodi	f℥ij	60|

Sig.—Use teaspoonful to gallon of hot water every second night.

[1] Ruhrah: Diseases of Children.

This makes about as strong a solution as can well be tolerated by the patient and often proves too strong. If used oftener than once a day it will frequently cause too much irritation. It is usually employed in connection with the daily or twice daily douches of hot saline.

Official Iodides.

Incompatibles.—Mineral acids and salts, alkaloids, bismuth subnitrate, soluble lead salts, mercurous salts, glycyrrhiza, potassium chlorate, spirit of nitrous ether, silver nitrate, starch.

AMMONII IODIDUM. Eng., Ammonium Iodide. Formula, NH_4I.
Form.—Small colorless crystals or granular powder.
Odor and Taste.—Odorless; a sharp, saline taste.
Solubility.—In 0.6 part of water or 3.7 parts of alcohol.
Average Dose.—5 grains (0.3 Gm.).

POTASSII IODIDUM. Eng., Potassium Iodide. Formula, KI.
Form.—Colorless crystals or white granular powder.
Odor and Taste.—A faint, iodine-like odor; a pungent, saline, afterward bitter taste, with a disagreeable, brassy after-taste.
Solubility.—In 0.7 part of water or about 22 parts of alcohol.
Average Dose.—5 grains (0.3 Gm.).

SODII IODIDUM. Eng., Sodium Iodide. Formula, NaI.
Form.—Colorless crystals or white crystalline powder.
Odor and Taste.—Odorless; a saline and slightly bitter taste.
Solubility.—In about 0.55 part of water or 2 parts of alcohol.
Average Dose.—5 grains (0.3 Gm.).

ARSENI IODIDUM.—See Arsenum, p. 75.

FERRI IODIDUM (Syrup and Pills).—See Ferrum, p. 159.

HYDRARGYRI IODIDUM FLAVUM.—See Hydrargyrum, p. 181.

HYDRARGYRI IODIDUM RUBRUM.—See Hydrargyrum, p. 181.

STRONTII IODIDUM. Eng., Strontium Iodide. Formula, SrI_2.
Form.—Usually a white powder.
Odor and Taste.—Odorless; a bitter, saline taste.
Solubility.—In 0.2 part of water. Soluble in alcohol.
Average Dose.—5 grains (0.3 Gm.).

THYMOLIS IODIDUM.—See Thymol, p. 311.

ACIDUM HYDRIODICUM DILUTUM. Eng., Diluted Hydriodic Acid. A colorless liquid containing about 10 per cent. of the absolute acid (HI) and about 90 per cent. of water.
Average Dose.—8 minims (0.5 mil).

Syrupus Acidi Hydriodici. Eng., Syrup of Hydriodic Acid. Contains about 1.4 per cent. by weight of the absolute acid (HI).
Average Dose.—1 fluidrachm (4 mils).

Therapeutic Action.—Alterative, resolvent.

Uses.—Extensively employed in the treatment of syphilis, rheumatism, arteriosclerosis, angina pectoris, interstitial nephritis, chronic bronchitis, asthma, goiter, lead- and mercury- poisoning, hepatic cirrhosis, and after the acute stage in apoplexy, meningitis, etc.

Iodism.—The iodides may sometimes produce unpleasant results even when taken in comparatively small amounts. The usual symptoms are: pain in the articulation of the inferior maxilla, coryza, excessive flow of saliva and skin lesions which may assume any one of a variety of forms. A condition characterized by a bullous eruption may occur, though it is, fortunately, rather rare. It is said to usually develop in cardiorenal cases. It is generally fatal and no rational line of treatment seems to have even been suggested. The treatment of iodism consists in discontinuing the drug and favoring elimination. Large doses of sodium bicarbonate have been recommended.

Administration.—Potassium Iodide is by far the most largely used; Sodium Iodide would come next. It will be noted that the iodides are colorless crystalline salts, freely soluble in water, and forming clear, colorless solutions. They have a disagreeable taste and a tendency to absorb moisture from the air, so should not be dispensed in powders. They should not be given in capsules, as the action on the gastric mucosa would be undesirable. They should always be prescribed in solution, if for internal use, and administered well diluted. Many prefer that the patient use milk as the diluent, as it seems to reduce to a minimum the disagreeable gastric effects and tends to better disguise the taste. Probably a better plan is to give the dose in water and follow with a glass of milk. The favorite time for administration is two hours after meals, and there seems to be less interference with the gastric function by giving at that time.

An iodide is usually prescribed in solution alone or with iodine or other iodides; an exception to this is the so-called "Mixed Treatment," when an iodide is prescribed with a mercuric salt, and sometimes with such agents as the Compound Tincture of Cinchona or Aromatic Fluidextract of Cascara.

When the dose of the iodide is to be changed or the drug long continued, the most convenient and economical method is to prescribe it alone in an aqueous solution, a minim of which will represent about a grain of the drug. Too large an amount should not be

ordered at any time, as the solution is apt to undergo decomposition and free iodine be liberated.

It should be remembered that the iodides precipitate most alkaloids.

Probably the most common and convenient method of administering an iodide is in the following so-called "saturated solution":

℞		or
Potassii Iodidi	ʒj	30
Aquæ Dest.	q. s. fʒj	30

M. ft. sol.

Sig.—Begin with five (5) drops as directed.

Among the advantages of this prescription are economy and convenience in changing dose.

Several iodides are sometimes combined, as:

℞		or
Potassii Iodidi,		
Sodii Iodidi	āā. ʒij	8
Strontii Iodidi	ʒj	4
Aquæ	q. s. fʒiv	120

M.

Sig.—Teaspoonful as directed two hours after meals.

Ammonium Iodide is sometimes used alone or in combination for pulmonary trouble, as in the following for asthma:

℞		or
Ammonii Iodidi	ʒj	4
Potassii Iodidi	ʒiv	15
Ammonii Bromidi	ʒij	8
Elix. Aromatici	q. s. fʒiv	120

M.

Sig.—Teaspoonful with water three times a day.

Mixed treatment may be prescribed, as:

℞		or
Hydrarg. Chlor. Corros.	gr. ij	13
Potassii Iodidi	ʒj	30 00
Aquæ Dest.	q. s. fʒj	30 00

M. ft. sol.

Sig.—Begin with five (5) drops as directed.

Mixed treatment with a bitter tonic is often considered desirable:

℞		or
Hydrarg. Chlor. Corros.	gr. iss	1
Potassii Iodidi	ʒv	20 0
Aquæ	fʒj	30 0
Tinct. Cinchon. Co.	q. s. fʒiv	120 0

M.

Sig.—Teaspoonful with water before meals.

Or mixed treatment with a laxative:

℞		or	
Hydrarg. Chlor. Corros.	gr. ij		13
Potassii Iodidi	ʒj	30	00
Flext. Cascaræ Sag. Arom.	fʒj	30	00
Vini Xerici ..... q. s.	fʒvj	180	00

M.

Sig.—Teaspoonful in water two hours after meals.

In the treatment of syphilis in infants:

℞[1]		or	
Hydrarg. Chlor. Corros.	gr. j		065
Potassii Iodidi	ʒij	8	000
Syr. Zingiberis	fʒj	30	000
Aquæ ..... q. s.	fʒij	60	000

M.

Sig.—Five (5) drops in milk three times a day.

In the treatment of syphilis in the tertiary stage:

℞[2]		or	
Hydrarg. Iod. Rub.	gr. iv		26
Potassii Iodidi	ʒj	30	00
Aquæ Destill. ..... q. s.	fʒvj	180	00

M.

Sig.—Teaspoonful in water after meals.

In the treatment of syphilis:

℞[3]		or	
Potassii Iodidi,			
Sodii Iodidi,			
Ammonii Iodidi ..... āā.	gr. xcvj		6
Syrupi Aurantii	fʒj		30
Aquæ ..... q. s.	fʒvj		180

M.

Sig.—Teaspoonful well diluted four times daily.

In the treatment of conditions attended with high blood-pressure, as arteriosclerosis:

℞		or	
Sodii Nitritis	gr. xv		1
Potassii Iodidi	gr. clx		10
Aquæ ..... q. s.	fʒiv		120

M.

Sig.—Teaspoonful with milk two hours after meals.

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[1] **Musser and Kelly: Practical Treatment.**

[2] *Ibid.*

[3] **White and Martin: Genito-urinary and Venereal Diseases.**

As an application to the mucous membranes:

℞[1]		or	
Iodi	gr. j		065
Potassii Iodidi	gr. xx	·1	300
Glycerini	q. s. f℥j	30	000

M.

Sig.—Apply as directed.

IPECACUANHA.

Latin, Ipecacuanha (Gen., Ipecacuanhæ). Eng., Ipecac. The dried root to which may be attached a portion of the stem of *Cephaelis ipecacuanhæ*, or *Cephaelis acuminata*.

Principal Constituents.—Emetine (1 to 2 per cent.), Tannic Acid, etc.

Average Dose.—Expectorant, 1 grain (0.06 Gm.). Emetic, 15 grains (1 Gm.).

Official Preparations and Alkaloid.

Fluidextractum Ipecacuanhæ. Eng., Fluidextract of Ipecac.

Average Dose.—Expectorant, 1 minim (0.05 mil). Emetic, 15 minims (1 mil).

Pulvis Ipecacuanhæ et Opii.—See Opium, p. 239.

Syrupus Ipecacuanhæ. Eng., Syrup of Ipecac. Represents 7 per cent. of Ipecac. Contains some free Acetic Acid.

Average Dose.—Expectorant, 15 minims (1 mil). Emetic, 4 fluidrachms (15 mils).

Emetinæ Hydrochloridum (Gen., Emetinæ Hydrochloridi). **Eng., Emetine Hydrochloride. The hydrochloride of an alkaloid obtained from ipecac.**

Form.—**A white or very slightly yellowish crystalline powder.**

Odor and Taste.—**Odorless. Not given by mouth.**

Solubility.—**Freely soluble.**

Average Dose.—Hypodermic, ⅛ grain (0.2 Gm.).

Therapeutic Action.—Emetic, expectorant, diaphoretic.

Uses.—Coughs, bronchitis, pneumonia, amebic dysentery and liver abscesses, etc. A valuable emetic for acute indigestion, croup, poisoning, etc. A constituent of many purgative formulæ.

Administration.—Emetine Hydrochloride, the Syrup of Ipecac, and the Powder of Ipecac and Opium are the forms most commonly used.

The expectorant dose as here given will often prove too large. A safe rule would probably be to make 5 minims of the syrup the maximum expectorant dose till the tolerance of the patient is known.

[1] Ruhrah: Diseases of Children.

Emetine Hydrochloride is administered by needle, usually injected deep into the deltoid muscle, where it seems much less apt to cause local trouble than if put under the skin. The aseptic ampoules are the form of choice. They are supplied to contain the various doses in common use.

The following prescriptions illustrate some methods of prescribing:

As an emetic:

℞		or
Syr. Ipecacuanhæ	f℥ij	60

Sig.—Tablespoonful every fifteen minutes till effect.

For children, as in the treatment of spasmodic croup, a teaspoonful would be given.

In expectorant preparations (for child 4 years old):

℞		or
Potassii Citratis	gr. lxxx	5
Syr. Ipecacuanhæ	f℥ss	2
Spir. Ætheris Nit.	f℥ij	8
Syr. Limonis	f℥iv	15
Aquæ	q. s. f℥ij	60

M.

Sig.—Teaspoonful in water every two hours.

Or:

℞		or
Syr. Ipecacuanhæ	f℥ss	2
Limonis Succi	f℥iv	15
Liq. Potas. Citratis	q. s. f℥ij	60

M.

Sig.—Teaspoonful in water every two hours.

In the treatment of the cough of measles:

℞[1]		or
Potassii Citratis	℥ss	15
Limonis Succi	f℥j	30
Tinct. Opii Camph.	f℥ij	8
Syr. Ipecacuanhæ	f℥ij	8
Syr. Tolutani	q. s. f℥ij	60

M.

Sig.—Teaspoonful in water every two hours.

[1] **Anders: Practice of Medicine.**

In a laxative preparation for tuberculosis:

℞[1]		or
Mas. Hydrargyri,		
Aloes Pulv.,		
Ipecacuanhæ Pulv.,		
Capsici Pulv.	āā. gr. xij	8

M. ft. cap. no. xxiv.
Sig.—One at night.

In the interval treatment of spasmodic laryngitis of childhood:

℞[2]		or	
Tinct. Aconiti	♏ viij		5
Syr. Ipecacuanhæ	f℥iss	6	0
Tinct. Opii Camph.	f℥ij	12	0
Liq. Potassii Cit. .....q. s.	f℥iij	90	0

M.
Sig.—Teaspoonful in water every two hours. (Shake-label.)

In the treatment of amebic dysentery, while Emetine Hydrochloride is employed by needle, it is often considered desirable to give ipecac by mouth. The freshly prepared, salol-coated pills, are usually considered more desirable, and may be ordered as follows:

℞		or	
Ipecacuanhæ Pulv.	gr. ccl	16	
Phenylis Salicylatis	q. s.		

Ft. pil. enter. no. L.
Sig.—Ten (10) at night as directed.

Written instructions should be left with patient, giving detailed information.

Some prefer to give full doses each time the pills are administered, some to begin with a large dose and gradually decrease.

Particular care should be exercised that the pills are properly coated. If the coating is too thick they may pass through the intestinal tract without change; if too thin or incomplete, some of the ipecac may be liberated in the stomach and violent emesis occur. The diarrhea often charged to ipecac in this treatment is probably often due to hard fragments of the shells of the salol coating acting as an irritating foreign body, and the patient sometimes passes those pieces having the appearance of the shells of bird-eggs.

In some cases of dysentery the peristalsis is so active that, even when properly coated, the pills are passed before the salol is dissolved. In such cases opium is indicated, and may be administered as paregoric or the tincture an hour or two before the pills are taken.

[1] Musser and Kelly: Practical Treatment.
[2] Hughes: Practice of Medicine.

JALAPA.

Latin, Jalapa (Gen., Jalapæ). Eng., Jalap. The dried tuberous root of *Exogonium Purga.*

Average Dose.—15 grains (1 Gm.).

Official Preparations.

Pulvis Jalapæ Compositus. Eng., Compound Powder of Jalap. Jalap, 35 Gm.; Potassium Bitartrate, 65 Gm.

Average Dose.—30 grains (2 Gm.).

Resina Jalapæ. Eng., Resin of Jalap.

Average Dose.—2 grains (0.125 Gm.).

Resin of Jalap is contained in the Compound Cathartic Pills.

Therapeutic Action.—Purgative (hydragogue), diuretic.

Uses.—Employed as a purgative, particularly in such conditions as nephritis, dropsy, apoplexy and uremia.

Administration.—It is usually given in the form of the Compound Powder. The U. S. P. dose is often greatly exceeded. The following illustrates a method of prescribing:

As a hydragogue cathartic:

℞ or

Pulv. Jalapæ Co. ..... ʒiv 15|

Ft. cht. no. vj.

Sig.—One every two hours till effect.

In the treatment of ascites:

℞[1] or

Pulv. Jalapæ Comp. ..... ʒj 30|

Ft. cht. no. viij.

Sig.—One in water an hour before breakfast.

KAOLINUM.

(Not Official.)

Latin, Kaolinum. Eng., Kaolin.

A native Aluminum Silicate. A soft, white or yellowish-white powder, or in lumps.

Preparation (U. S. P., viii).

Cataplasma Kaolini. Eng., Cataplasm of Kaolin. Kaolin, 577 Gm.; Boric Acid, 45 Gm.; Thymol, 0.5 Gm.; Methyl Salicylate, 2 Gm.; Oil of Peppermint, 0.5 Gm.; Glycerin, 375 Gm.

Therapeutic Action.—Cataplasm of Kaolin is said to be emollient, local sedative, exosmotic, antiphlogistic.

[1] Hughes: Practice of Medicine.

Uses.—The Cataplasm is employed in the treatment of pleurisy, pneumonia, mastitis, sprains and deep-seated pain generally.

Administration.—The official Cataplasm of Kaolin is still not stocked by many druggists or often prescribed, as the proprietary preparations have a rather strong hold on the profession. It should be applied direct to the skin over the part affected. It is used as hot as patient can tolerate, and is used in a layer from one-eighth to one-quarter inch in thickness. This is covered with a heavy layer of absorbent cotten. The application is usually changed every six to twelve hours.

KINO.

Latin, Kino (Gen., Kino). Eng., Kino. The spontaneously dried juice of *Pterocarpus Marsupium.*

Principal Constituent.—Kinotannic Acid (about 75 per cent.).

Average Dose.—8 grains (0.5 Gm.).

Official Preparation.

Tinctura Kino. Eng., Tincture of Kino. Represents 10 per cent. of the drug.

Average Dose.—1 fluidrachm (4 mils).

Therapeutic Action.—Astringent.

Uses.—Principally used in the treatment of diarrhea and dysentery.

Administration.—The tincture is the preparation employed. It is usually given with other agents, as in the following illustration:

In the treatment of enterocolitis:

℞[1]		or
Bismuthi Subnit.	ʒiij	12
Tinct. Kino,		
Tinct. Opii Camph.	āā fʒiss	45
Misturæ Cretæ	q. s. fʒvj	180

M.

Sig.—Tablespoonful every three hours till effect. (Shake-label.)

LACTUCARIUM.

Latin, Lactucarium. Eng., Lactucarium. Synonym, Lettuce. The dried milk-juice of *Lactuca virosa.*

Average Dose.—15 grains (1 Gm.).

[1] Hughes: Practice of Medicine.

Official Preparations.

Syrupus Lactucarii. Eng., Syrup of Lactucarium. Represents 5 per cent. of the drug.

Average Dose.—2½ fluidrachms (10 mils).

Tinctura Lactucarii. Eng., Tincture of Lactucarium. Represents 50 per cent. of the drug.

Average Dose.—30 minims (2 mils).

Therapeutic Action.—Sedative, hypnotic.

Uses.—Has been recommended for whooping-cough, hysteria, neurasthenia, etc. Seldom prescribed.

LEPTANDRA.

(*U. S. P., viii*).

Latin, Leptandra. Eng., Leptandra. Synonym, Culver's Root. The dried rhizome and roots of *Veronica virginica.*

Principal Constituent.—Leptandrin.

Average Dose.—15 grains (1 Gm.).

Preparations.

Extractum Leptandræ. Eng., Extract of Leptandra.

Average Dose.—4 grains (0.250 Gm.).

Fluidextractum Leptandræ. Eng., Fluidextract of Leptandra.

Average Dose.—15 minims (1 mil).

Therapeutic Action.—Said to be a cholagogue purgative.

Uses.—Has been recommended for chronic constipation and as an adjuvant for other purgative agents. Seldom prescribed.

LIMON—Lemon.

The following are official:

LIMONIS CORTEX. Eng., Lemon Peel. The outer rind of the fresh ripe fruit of *Citrus medica limonum.*

Official Preparations and Constituent of Lemon Peel.

Tinctura Limonis Corticis. Eng., Tincture of Lemon Peel. Represents 50 per cent. of the drug.

Syrupus Acidi Citrici. Eng., Syrup of Citric Acid. Synonym, Syrup of Lemon. Contains 1 per cent. each of Citric Acid and the Tincture of Lemon Peel.

Oleum Limonis. Eng., Oil of Lemon.

Average Dose.—3 minims (0.2 mil).

Unofficial.

LIMONIS SUCCUS. Eng., Lemon Juice (U. S. P., viii). The freshly expressed juice of the ripe fruit of *Citrus limonum.*

Average Dose.—1 fluidounce (30 Cc.).

Lemon and Oil of Lemon are contained in several official preparations.

Therapeutic Action.—The Oil of Lemon and the preparation of the peel are stomachic and flavoring agents. Lemon Juice is refrigerant and antiscorbutic.

Uses.—These preparations are used as flavoring agents. Lemon juice in the form of lemonade is frequently employed in fevers as a refrigerant drink and as a means of inducing the patient to take large quantities of water.

See Citric Acid and Citrates.

For cough, bronchitis, etc.:

℞		or
Potassii Citratis	ʒj	30
Limonis Succi	fʒj	30
Tinct. Opii Camph.	fʒss	15
Spir. Vini Gallici	fʒj	30
Syr. Acidi Citrici	q. s. fʒiv	120

M.

Sig.—Teaspoonful in water every two hours.

In the treatment of the cough of measles:

℞[1]		or
Potassii Citratis	ʒss	15
Limonis Succi	fʒj	30
Tinct. Opii Camph.	fʒij	8
Syr. Ipecacuanhæ	fʒij	8
Syr. Tolutani	q. s. fʒij	60

M.

Sig.—Teaspoonful in water every two hours.

In the treatment of cough (for child 4 years old):

℞		or
Potassii Citratis	ʒij	8
Spir. Ætheris Nit.	fʒiij	12
Syr. Ipecacuanhæ	fʒss	2
Syr. Limonis	fʒiv	15
Aquæ	q. s. fʒiij	90

M.

Sig.—Teaspoonful every two hours when awake.

Linimentum Ammoniæ.—See Ammonia.

Linimentum Belladonnæ.—See Belladonna.

Linimentum Calcis.—See Calcium.

Linimentum Camphoræ.—See Camphora.

[1] **Anders: Practice of Medicine.**

Linimentum Chloroformi.—See Chloroformum.
Linimentum Saponis.—See Sapo.
Linimentum Saponis Mollis.—See Sapo.
Linimentum Terebinthinæ.—See Terebinthina.

LINUM.

Latin, Linum. Eng., Linseed, Flaxseed. The ripe seeds of *Linum usitatissimum.*

Official Constituent.

Oleum Lini. Eng., Linseed Oil.
Average Dose.—1 fluidounce (30 mils).
Linseed Oil is contained in several official preparations. Two Linseed Oils are on the market, known as the "raw" and the "boiled." The former is the one used in medicine.

Therapeutic Action.—Demulcent, emollient, laxative, diuretic.

Uses.—Flaxseed in the form of meal is extensively used by the public as poultices for boils, sprains, etc. The oil is used in veterinary practice for colic. It is seldom prescribed for internal use in man, but is a constituent in making Lime Liniment, which is much used for minor burns.

Liquor Acidi Arsenosi.—See Arsenum.
Liquor Ammonii Acetatis.—See Ammonium.
Liquor Arseni et Hydrargyri Iodidi.—See Arsenum.
Liquor Calcis.—See Calcium.
Liquor Cresolis Compositus.—See Cresol.
Liquor Ferri Chloridi.—See Ferrum.
Liquor Ferri et Ammonii Acetatis.—See Ferrum.
Liquor Ferri Subsulphatis.—See Ferrum.
Liquor Ferri Tersulphatis.—See Ferrum.
Liquor Formaldehydi.—See Formaldehydum.
Liquor Hydrogenii Dioxidi.—See next page.
Liquor Hypophysis.—See Hypophysis Sicca.
Liquor Iodi Compositus.—See Iodum.
Liquor Magnesii Citratis.—See Magnesium.
Liquor Plumbi Subacetatis.—See Plumbum.
Liquor Plumbi Subacetatis Dilutus.—See Plumbum.
Liquor Potassii Arsenitis.—See Arsenum.
Liquor Potassii Citratis.—See Potassium.
Liquor Potassii Hydroxidi.—See Potassium.
Liquor Sodæ Chlorinatæ.—See Sodium.
Liquor Sodii Arsenatis.—See Arsenum.
Liquor Sodii Glycerophosphatis.—See Acidum Hypophosphorosum.
Liquor Sodii Hydroxidi.—See Sodium.
Liquor Zinci Chloridi.—See Zincum.

LIQUOR HYDROGENII DIOXIDI.

Latin, Liquor Hydrogenii Dioxidi (Gen., Liquoris Hydrogenii Dioxidi). Eng., Solution of Hydrogen Dioxide. Synonyms, Peroxide of Hydrogen, Aqua Hydrogenii Dioxidi.

The ninth revision of the Pharmacopeia changed the name of this preparation from an "aqua" to "liquor."

An aqueous solution containing not less than 3 per cent. by weight of absolute Hydrogen Dioxide (H_2O) corresponding to 10 volumes of available oxygen.

Form.—A colorless liquid.

Odor and Taste.—Practically odorless. A slightly acidulous taste and producing a peculiar sensation and soapy froth in the mouth.

Average Dose.—1 fluidrachm (4 mils).

Therapeutic Action.—Antiseptic and deodorant.

Uses.—It is seldom used internally. Locally, it is extensively employed in the treatment of sores, ulcers, abscesses, tonsillitis, diphtheria, scarlatina, stomatitis, etc.

Administration.—This preparation is prescribed either alone or diluted with one or more volumes of distilled water. It is seldom prescribed with other medicinal agents.

The manner of prescribing is shown in the following:

℞ or

Liq. Hydrogenii Diox. ..... f℥ij 60|

M.

Sig.—Use 1 part to 3 parts of water as a spray.

Or:

℞ or

Liq. Hydrogenii Diox. ..... f℥j 30|

Aquæ Destillatæ .....q. s. f℥iv 120|

M.

Sig.—Use as a spray every four hours.

LITHIUM.

Official Salts and Preparations.

LITHII BROMIDUM.—See Bromides, p. 100.

LITHII CARBONAS. Eng., Lithium Carbonate.

Average Dose.—8 grains (0.5 Gm.).

LITHII CITRAS.—See Citrate, p. 23.

LOBELIA.

Latin, Lobelia. Eng., Lobelia. The dried leaves and flowering tops of *Lobelia inflata.*

Average Dose.—2½ grains (0.15 Gm.).

Official Preparations.

Fluidextractum Lobeliæ. Eng., Fluidextract of Lobelia.
Average Dose.—2½ minims (0.15 mil).

Tinctura Lobeliæ. Eng., Tincture of Lobelia. Represents 10 per cent. of the drug.
Average Dose.—15 minims (1 mil).

Therapeutic Action.—Antispasmodic, depressant, emetic, expectorant.

Uses.—Principally used for asthma, bronchitis, and kindred conditions. Seldom prescribed.

LYCOPODIUM.

Latin, Lycopodium. Eng., Lycopodium. The spore of *Lycopodium clavatum.*

A fine yellowish powder, almost odorless and tasteless.

Magma Magnesiæ.—See Magnesium.

MAGNESIUM.

Official Salts and Preparations.

MAGNESII CARBONAS. Eng., Magnesium Carbonate. Synonym, Block Magnesia.
Form.—White powder or mass. Usually pressed into blocks.
Odor and Taste.—Odorless; almost tasteless.
Solubility.—Insoluble in water or alcohol.
Average Dose.—45 grains (3 Gm.).
Magnesium Carbonate is used in preparing many official preparations.

LIQUOR MAGNESII CITRATIS. Eng., Solution of Magnesium Citrate. An aqueous solution of freshly prepared Magnesium Citrate containing an excess of citric acid, impregnated with carbon dioxide, flavored with Lemon, and sweetened with syrup.
Average Dose.—12 fluidounces (350 mils).

Magma Magnesiæ. Eng., Magnesia Magma. Synonym, Milk of Magnesia. An aqueous liquid containing in suspension about 7 per cent. of Magnesium Hydroxide.
Average Dose.—2½ fluidrachms (10 mils).

MAGNESII OXIDUM. Eng., Magnesium Oxide. Synonyms, Magnesia, Calcined Magnesia, Light Magnesia.

Form.—White, bulky powder.

Odor and Taste.—Odorless and almost tasteless.

Solubility.—Practically insoluble in water or alcohol.

Incompatibles.—Acids, copaiba, salts of iron; water, etc.

Average Dose.—30 grains (2 Gm.).

Magnesium Oxide is used in several official preparations.

MAGNESII OXIDUM PONDEROSUM. Eng., Heavy Magnesium Oxide, Heavy Magnesia. A white powder differing from the foregoing in not being so bulky or so readily uniting with water.

Average Dose.—30 grains (2 Gm.).

MAGNESII SULPHAS. Eng., Magnesium Sulphate. Synonyms, Epsom Salt, Salts.

Form.—Small, colorless prisms or needles.

Odor and Taste.—Odorless; saline and bitter taste.

Solubility.—In 1 part of water. Insoluble in alcohol.

Incompatibles.—Alkaloids, arsenates, carbonates, phosphates, tartrates, phosphoric acid, lime water, lead acetate, silver nitrate, etc.

Average Dose.—4 drachms (15 Gm.).

Magnesium Sulphate is contained in the Compound Infusion of Senna.

Therapeutic Action.—The oxides, the carbonate, and the magma are antacid and laxative. The sulphate is a hydragogue purgative.

Uses.—The oxides and the carbonates are principally used in hyperchlorhydria, gastric ulcer, etc. The sulphate is one of the most extensively used purgatives.

Administration.—Magnesium Sulphate, Magnesium Oxide, and the solution of Magnesium Citrate are the preparations most frequently prescribed. The latter preparation is dispensed in bottles of 12 fluidounces, and should always be prescribed in that quantity. After it has been opened and the excess of carbon dioxide escaped, it acquires a flat taste; so should always be ordered fresh.

Magnesium Sulphate is the cheapest and probably the most largely used purgative. It is usually kept by the laity, and it is often advisable, particularly with the poorer class of patients, to merely include in the written instructions for patient, an order that a certain amount of Epsom Salts be taken. This preparation is commonly called "Salts," and when the word is written without the final "s" being legible, or the word "Epsom" being employed, it has been mistaken for "Salt," and Sodium Chloride used. A desirable method of administering it is in a glass of lemonade.

As a purgative:

℞ or

Magnesii Sulph.	℥j	30
Syrupi	fℨss	15
Limonis Succi	q. s. fℨij	60

M.

Sig.—Tablespoonful in glass of water every four hours until effect.

In the treatment of diarrhea:

℞ or

Magnesii Sulphatis	℥iv	15|0
Tinct. Opii Deod.	♏xl	2|5
Acidi Sulph. Arom.	fℨiss	6|0
Aquæ Menth. Pip.	q. s. fℨiv	120|0

M.

Sig.—Tablespoonful every four hours until relieved.

As an aperient in the treatment of comedo:

℞[1] or

Magnesii Sulphatis	℥iss	45
Ferri Sulphatis	gr. xvj	1
Acidi Sulph. Dil.	℥ij	8
Aquæ	q. s. fℨviij	240

Sig.—Tablespoonful in water before breakfast.

As a purgative:

℞ or

Liq. Magnesii Citratis	fℨxij	360

Sig.—Take before breakfast.

As an antacid, as in the treatment of hyperacidity, gastric ulcer, etc.:

℞ or

Atropinæ Sulphatis	gr. 1/100	|006
Bismuthi Subnit.,		
Magnesii Oxidi	āā. ℥iv	15|000
Sodii Bicarb.	℥j	8|000

M. ft. cht. no. xv.

Sig.—One in milk two hours after meals.

In the treatment of erythema venenatum:

℞[2] or

Acidi Borici	gr. xv	1|0
Talci Purificati	gr. xx	1|3
Cretæ Præparatæ	℥ij	8|0
Magnesii Carbonatis	℥iij	12|0

M.

Sig.—Use as a dusting powder.

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[1] Ohmann-Dumesnil: Diseases of the Skin.

[2] *Ibid.*

MALTUM.

Latin, Maltum. Eng., Malt. The grain of barley, *Hordeum sativum,* partially germinated artificially and then dried.

Official Preparation.

Extractum Malti. Eng., Extract of Malt. A sweet, thick, brownish liquid.

Average Dose.—4 fluidrachms (15 mils).

Therapeutic Action.—Nutrient and tonic.

Uses.—Malt food and beverages are frequently recommended to improve digestion, increase weight, stimulate the secretion of milk and relieve constipation.

Administration.—Seldom used except in the form of the various proprietary beverages, foods, etc.

MANGANUM.

Official Salts.

MANGANI DIOXIDUM PRÆCIPITATUM. Eng., Precipitated Manganese Dioxide.

Form.—A black powder.

Odor and Taste.—Odorless and tasteless.

Solubility.—Insoluble in water and alcohol.

Incompatibles.—Alkalies, carbonates, phosphates, etc.

Average Dose.—4 grains (0.25 Gm.).

POTASSII PERMANGANAS.—See Potassium, p. 267.

Therapeutic Action.—Manganese dioxide is classed as a tonic, alterative and emmenagogue.

Uses.—Principally used for functional amenorrhea and anemia.

Administration.—Precipitated manganese dioxide is usually employed in the form of the ready-prepared pills or in capsules, either alone or with Ferrous Carbonate, Arsenic Trioxide, etc.

MANNA.

Latin, Manna. Eng., Manna. The dried saccharine exudation of *Fraxinus Ornus.*

Average Dose.—4 drachms (15 Gm.).

Therapeutic Action.—Classed as a laxative, demulcent and nutrient.

Uses.—It is employed as a household remedy, usually in combination with Senna, as a purgative. Manna is considered particularly desirable on account of its pleasant taste. Seldom prescribed.

MATRICARIA.

Latin, Matricaria. Eng., Matricaria. Synonym, German Chamomile. The dried flower-heads of *Matricaria Chamomilla.*

Average Dose.—4 drachms (15 Gm.).

Therapeutic Action.—Stomachic, carminative, antispasmodic.

Uses.—Seldom prescribed.

MEL—Honey.

Latin, Mel (Gen., Mellis). Eng., Honey. A saccharine secretion deposited in the honey-comb by the bee, *Apis mellifera.*

Official Preparations.

Mel Depuratum. Eng., Clarified Honey.

Mel Rosæ.—See Rosa Gallica.

Honey is contained in some other official preparations.

Therapeutic Action.—Nutrient, mild laxative.

Uses.—A pleasant flavor and sweetening agent. A constituent of many cough and laxative preparations, gargles, etc.

Administration.—Clarified Honey is usually prescribed with other agents in quantities only sufficient to give a pleasant taste.

MENTHA PIPERITA.

Latin, Mentha Piperita (Gen., Menthæ Piperitæ). Eng., Peppermint. The dried leaves and flowering tops of *Mentha piperita.*

Average Dose.—60 grains (4 Gm.).

Official Constituents and Preparations.

Oleum Menthæ Piperitæ. Eng., Oil of Peppermint. A volatile oil.

Average Dose.—3 minims (0.2 mil).

Menthol.—See Menthol, p. 221

Aqua Menthæ Piperitæ. Eng., Peppermint Water. A saturated, aqueous solution of Oil of Peppermint.

Average Dose.—4 fluidrachms (15 mils).

Spiritus Menthæ Piperitæ. Eng., Spirit of Peppermint. Synonym, Essence of Peppermint. Represents 10 per cent. of Oil of Peppermint and 1 per cent. of the crude drug.

Average Dose.—30 minims (2 mils).

Therapeutic Action.—Oil of Peppermint is refrigerant, carminative, stomachic, antiseptic.

Uses.—Frequently used as a flavoring agent; also in the treatment of acute indigestion, flatulence, hysteria, etc. Externally it is sometimes employed for neuralgia, rheumatism, etc.

Administration.—The following prescriptions illustrate the employment of the preparations of peppermint both as active agents and as vehicles:

℞		or	
Camphoræ	gr. iv		26
Ol. Menth. Pip.,			
Ol. Pini Syl.,			
Eucalyptolis	ää. ♏iv		26
Petrolati Liq.	q. s. f℥iv	120	00

M.

Sig.—Use as a spray every four hours.

The internal use of peppermint is shown in the following for acute indigestion:

℞		or	
Spir. Menth. Pip.,			
Spir. Ætheris Co.	ää. f℥ss	15	

M.

Sig.—Teaspoonful in water every hour till relieved.

In the treatment of acute indigestion, etc.:

℞		or	
Spir. Chloroformi,			
Spir. Menth. Pip.	ää. f℥ss	15	

M.

Sig.—Teaspoonful in water every two hours till relieved.

These are usually employed in a glass of hot water, after having emptied the stomach by the use of warm saline solution. Sodium Bicarbonate is often added at the time of administration.

Used as a vehicle in the treatment of rheumatism:

℞[1]		or	
Sodii Salicylatis	℥ss	15	
Aquæ Menthæ Pip.	q. s. f℥iv	120	

M.

Sig.—Two (2) teaspoonfuls well diluted every two hours.

In the treatment of chronic vomiting of childhood:

℞[2]		or	
Liq. Potas. Arsenitis	♏xij		75
Sodii Bicarbonatis	gr. xxiv	1	50
Aquæ Menthæ Pip.	q. s. f℥iij	90	00

M.

Sig.—Teaspoonful three times a day.

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[1] Musser and Kelly: Practical Treatment.

[2] Ruhrah: Diseases of Children.

As a vehicle in a preparation for the treatment of constipation:

℞[1]		or
Flext. Cascaræ Sagr.	f℥j	30
Tinct. Cardamomi Comp.	f℥ss	15
Glycerini	f℥j	30
Aquæ Menthæ Pip. q. s.	f℥iij	90

M.

Sig.—Teaspoonful in water after meals.

MENTHA VIRIDIS.

Latin, Mentha Viridis. Eng., Spearmint. The dried leaves and flowering tops of *Mentha spicata.*

Average Dose.—60 grains (4 Gm.).

Official Constituent and Preparation.

Oleum Menthæ Viridis. Eng., Oil of Spearmint. A volatile oil.
Average Dose.—3 minims (0.2 mil).

Aqua Menthæ Viridis. Eng., Spearmint Water. An aqueous, saturated solution of Oil of Spearmint.
Average Dose.—4 fluidrachms (15 mils).

Spiritus Menthæ Viridis. Eng., Spirit of Spearmint. Represents 10 per cent. of the oil and 1 per cent. of the crude drug.
Average Dose.—30 minims (2 mils).

Therapeutic Action.—Carminative, refrigerant, etc. Less active than peppermint.

Uses.—Seldom prescribed.

MENTHOL.

Latin, Menthol (Gen., Mentholis). Eng., Menthol. A secondary alcohol obtained from Oil of Peppermint or other mint oils.

Form.—Colorless Crystals.

Odor and Taste.—Odor of Peppermint. A warm, aromatic taste, followed by a sensation of cold when air is drawn into the mouth.

Solubility.—Only slightly soluble in water. Freely soluble in alcohol and chloroform.

Incompatibles.—Liquefies when triturated with camphor, hydrated chloral, thymol, etc.

Average Dose.—1 grain (0.06 Gm.).

Therapeutic Action.—Antiseptic, stimulant, carminative, local sedative.

[1] Hughes: Practice of Medicine.

Uses.—In various ways it is employed in the treatment of bronchitis, coryza, neuralgia, pruritus, diarrhea, typhoid fever, etc.

Administration.—Menthol is seldom prescribed as such for internal use. It is a constituent of many of the so-called "antiseptics." It is frequently used in ointments, liniments, inhalations, etc. Some combinations are shown in the following:

As an inhalation in rhinitis, sinus involvement, laryngitis, bronchitis, etc.:

℞	or
Mentholis, Camphoræ .....āā. ℥ij	8

M. tere bene.
Sig. Inhale frequently.

Or:

℞	or
Mentholis, Camphoræ .....āā. ℥j	4
Tinct. Benzoini Co. .....q. s. f℥ij	60

M.
Sig.—Use teaspoonful to pitcher of hot water.

Written instructions should be left with patient as to frequency and duration of the inhalations. Usually they are employed for about ten minutes every three hours. With children they are sometimes best employed during sleep by making a tent out of a newspaper, as the drug would affect the eyes if they were open. Adults should be instructed to keep the eyes closed.

In the treatment of neuralgia:

℞[1]	or
Chlorali Hydrati, Camphoræ, Mentholis .....āā. ℥j	4

M. et tere bene.
Sig.—Paint over parts as directed.

In the treatment of pruritus:

℞[2]	or
Phenolis, Mentholis .....āā. gr. xx	1 | 3
Petrolati .....q. s. ℥j	30 | 0

M. tere bene.
Sig.—Apply locally.

[1] Hughes: Practice of Medicine.
[2] Ashton: Practice of Gynecology.

In the treatment of pruritus:

℞[1]		or	
Mentholis,			
Camphoræ,			
Chlorali Hydrati	āā. gr. v.		32
Petrolati	q. s. ℥ss	15	00

M.
Sig.—Apply locally.

In the treatment of herpes progenitalis:

℞[2]		or	
Cocainæ Hydrochlor.	gr. j		065
Mentholis	gr. xij		800
Adipis Lanæ Hyd.	q. s. ℥ss	15	000

M.
Sig.—Apply locally.

In a liniment, as for myalgia, lumbago, strains, etc.:

℞		or	
Mentholis	℥j		4
Chloroformi	f℥j		30
Lin. Saponis	q. s. f℥vj		180

M.
Sig.—Apply with massage twice daily.

METHYLIS SALICYLAS.

See Acidum, Salicylicum, p. 41.

METHYLTHIONINÆ CHLORIDUM.

Latin, Methylthioninæ Chloridum. Eng., Methylthionine Chloride. Synonym, Methylene Blue, Methylthioninæ Hydrochloridum (U. S. P., viii).

Form.—A dark-green, crystalline powder or crystals having a bronze-like luster.

Solubility.—Readily soluble in water and somewhat less readily in alcohol, the solution having a deep-blue color.

Average Dose.—2½ grains (0.15 Gm.).

Therapeutic Action.—Classed as a diuretic, urinary antiseptic, etc.

Uses.—Sometimes employed in the treatment of gonorrhea, cystitis, pyelitis, and other conditions.

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[1] Hughes: Practice of Medicine.
[2] White and Martin: Genito-urinary and Venereal Diseases.

Administration.—Usually prescribed in capsules, either alone or with other agents. A convenient form is the ready-filled capsule, either hard or soft, put out by the pharmaceutical manufacturing houses. They may be obtained containing the drug alone or in various combinations.

MEZEREUM.

Latin, Mezereum. Eng., Mezereum. Synonym, Mezereon. The dried bark of *Daphne Mezereum, Daphne Gnidium* or *Daphne Laureola.*

Mezereum is contained in the Compound Fluidextract of Sarsaparilla.

Therapeutic Action.—Rubefacient, vesicant, etc.

Uses.—Has been recommended for such conditions as rheumatism, indolent ulcers, and scrofula. Seldom prescribed.

Mistura Cretæ.—See Calcium.
Mistura Glycyrrhizæ Composita.—See Glycyrrhiza.

MORPHINA.

See Opium, p. 239.

MORPHINÆ HYDROCHLORIDUM.

See Opium, p. 239.

MORPHINÆ SULPHAS.

See Opium, p. 239.

MOSCHUS.

Latin, Moschus. Eng., Musk. The dried secretion from the preputial follicles of *Moschus moschiferus.*

Average Dose.—4 grains (0.25 Gm.).

Official Preparation.

Tinctura Moschi. Eng., Tincture of Musk. Represents 5 per cent. of the drug.

Average Dose.—1 fluidrachm (4 mils).

Therapeutic Action.—Said to be stimulant and antispasmodic.

Uses.—Has been recommended in the treatment of hysteria, neurasthenia, hiccough, and certain debilitated conditions. Seldom prescribed.

Mucilago Acaciæ.—See Acacia.
Mucilago Tragacanthæ.—See Tragacantha.

MYRISTICA.

Latin, Myristica. Eng., Myristica. Synonym, Nutmeg. The ripe seed of *Myristica fragrans.*

Average Dose.—8 grains (0.5 Gm.).

Official Constituent.

Oleum Myristicæ. Eng., Oil of Myristica. A volatile oil.
Average Dose.—3 minims (0.2 mil).

Myristica or the Oil of Myristica is contained in several official preparations.

Therapeutic Action.—Carminative, sedative.

Uses.—Sometimes used in the treatment of nausea, flatulence, diarrhea, neuralgia, rheumatism, etc. Seldom prescribed.

MYRRHA.

Latin, Myrrha. Eng., Myrrh. A gum-resin obtained from one or more species of *Commiphora.*

Average Dose.—8 grains (0.5 Gm.).

Official Preparations.

Tinctura Myrrhæ. Eng., Tincture of Myrrh. Represents 20 per cent. of the drug in alcohol.
Average Dose.—15 minims (1 mil).

Myrrh is contained in the Compound Pills of **Rhubarb.**

Therapeutic Action.—Antiseptic, astringent, carminative.

Uses.—Employed principally in mouth-washes and gargles for salivation, stomatitis, tonsillitis, etc.

Administration.—Not often prescribed. The following illustrates the use of the drug:

In the treatment of stomatitis (child 3 years old):

℞[1]		or	
Potas. Chloratis	gr. xxiv	1	50
Tinct. Myrrhæ	♏x		65
Syr. Acaciæ	f℥j	30	00
Aquæ	q. s. f℥iij	90	00

M.
Sig.—Teaspoonful every three hours.

[1] **Anders: Practice of Medicine.**

NITROGENII MONOXIDUM.

Latin, Nitrogenii Monoxidum. Eng., Nitrogen Monoxide. Synonym, Nitrous Oxide. A colorless gas. Used extensively as a general anesthetic.

NUX VOMICA.

Latin, Nux Vomica (Gen., Nucis Vomicæ). Eng., Nux Vomica. Synonyms, Poison Nut, Dog Button, Quaker Button. The dried ripe seeds of *Strychnos nux vomica*, yielding not less than 2½ per cent. of Alkaloids.

Principal Constituents.—Strychnine (about 1.25 per cent.), brucine, tannic acid, etc.

Average Dose.—1 grain (0.06 Gm.).

Official Alkaloid, Salts and Preparations.

Extractum Nucis Vomicæ. Eng., Extract of Nux Vomica. A light-colored powder.

Average Dose.—¼ grain (0.015 Gm.).

Fluidextractum Nucis Vomicæ. Eng., Fluidextract of Nux Vomica.

Average Dose.—1 minim (0.05 mil).

Tinctura Nucis Vomicæ. Eng., Tincture of Nux Vomica. Represents about 10 per cent. of the drug.

Average Dose.—8 minims (0.5 mil).

Strychnina. Eng., Strychnine. An alkaloid obtained from Nux Vomica.

Form.—Colorless crystals or white powder.

Odor and Taste.—Odorless. Intensely bitter taste.

Solubility.—In 6420 parts of water or 136 of alcohol.

Incompatibles.—For Strychnine and its Salts: Alkalies, alkali carbonates and bicarbonates, ammonium chloride, benzoates, dichromates, bromides, borates, cyanides, iodides, salicylates, gold chloride, ichthyol, mercuric chloride, potassio-mercuric iodide, oxalic acid, picric acid, piperazin, oxidizers, tannic acid.

Average Dose.—1/40 grain (0.0015 Gm.).

Strychnine is contained in many official preparations.

Strychninæ Nitras. Eng., Strychnine Nitrate.

Form.—Colorless needles.

Odor and Taste.—Odorless. Intensely bitter taste.

Solubility.—In 42 parts of water or 150 parts of alcohol.

Incompatibles.—See Strychnina.

Average Dose.—1/40 grain (0.0015 Gm.).

Strychninæ Sulphas. Eng., Strychnine Sulphate.

Form.—Colorless or white crystals.

Odor and Taste.—Odorless. Intensely bitter taste.
Solubility.—In 32 parts of water or 81 parts of alcohol.
Incompatibles.—See Strychnina.
Average Dose.—1/40 grain (0.0015 Gm.).

Therapeutic Action.—Stimulant, tonic, stomachic.

Uses.—The preparations of Nux Vomica or the Strychnine salts have been used in the treatment of almost all diseases either during the progress of the maladies or to aid in the processes of repair. Particularly employed in conditions characterized by loss of appetite, weakness, indigestion, constipation or other evidences of lowered vitality.

Toxicology.—The usual symptoms of strychnine poisoning are nervous twitchings, hyperesthesia, convulsions. Some differential features of the convulsions are the relaxation between the attacks, the exaggerated reflexes and the lateness of the involvement of the muscles of neck and face. In children a comparatively small dose of strychnine may produce toxic symptoms.

Treatment consists largely in keeping the patient free from disturbing surroundings, chloroform by inhalation during the convulsions, and hydrated chloral and bromides by mouth or rectum. The stomach should be washed out, if possible, with a solution of potassium permanganate (1:3000). Elimination should be favored particularly by diuretics.

Administration.—The preparations most frequently used are the Tincture of Nux Vomica and Strychnine Sulphate. Extract of Nux Vomica and Strychnine Nitrate are also extensively used by some practitioners.

A common error seems to be that of giving the tincture in such small dosage as to be almost without effect; particularly is this the case when ordered to be taken by drops, as it averages about 140 drops to 60 minims. The strychnine content is only about 0.1 per cent.; so 5 drops would only represent about 1/500 grain of strychnine, while about 1/40 grain is the average dose when using the alkaloidal salt.

In prescribing strychnine in solution it is particularly inadvisable to employ it with the bromides or iodides, as the precipitate forms slowly, and being comparatively small in amount may be overlooked by both dispenser and patient and a poisonous amount taken at the final dose.

As a tonic, stimulant, stomachic, appetizer, etc.:

℞		or
Tinct. Nucis Vomicæ	f℥ij	60

Sig.—Twenty (20) drops in water before meals.

Or:

℞		or
Tinct. Nucis Vomicæ	f℥j	30
Tinct. Cardam. Co.	q. s. f℥vj	180

M.

Sig.—Teaspoonful in water before meals.

Used to stimulate appetite:

℞[1]		or
Tinct. Nucis Vomicæ	f℥j	4
Tinct. Gentianæ Comp.	f℥ij	60
Aquæ	q. s. f℥iv	120

M.

Sig.—Two (2) teaspoonfuls in water half-hour before meals.

As a tonic, etc.:

℞		or
Tinct. Nucis Vomicæ,		
Acidi Phos. Dil.,		
Tinct. Ferri Chlor.,		
Syr. Pruni Virg.	ää. f℥j	30

M.

Sig.—Teaspoonful in water after meals.

As a laxative, etc., in the treatment of atony:

℞[2]		or
Tinct. Nucis Vomicæ	ää. f℥iij	12
Flext. Cascaræ Sag.,		
Tinct. Cardamomi Comp.	q. s. f℥iij	90

M.

Sig.—Teaspoonful in water before meals.

In the treatment of indigestion:

℞		or
Pepsini	℥ij	8
Acidi Hydrochlor. Dil.,		
Tinct. Nucis Vomicæ,		
Glycerini	ää. f℥j	30
Aquæ	q. s. f℥vj	180

M.

Sig.—Teaspoonful in water after meals.

[1] Musser and Kelly: Practical Treatment.
[2] Stelwagon: Diseases of the Skin.

In the treatment of heart and kidney disease:

℞ or

Tinct. Nucis Vomicæ	f℥iv	15
Inf. Digitalis	q. s. f℥vj	180

M.

Sig.—Two (2) teaspoonfuls in water after meals.

Or:

℞ or

Tinct. Nucis Vomicæ,		
Tinct. Digitalis	āā. f℥j	30
Tinct. Cardam. Co.	q. s. f℥iv	120

M.

Sig.—Teaspoonful in water after meals.

As a stimulant:

℞

Tab. Strych. Sulph. (1/40 gr.) ..... no. xx

Sig.—One every six hours.

As a tonic, particularly in malaria:

℞ or

Strychninæ Sulph.,		
Arseni Trioxidi	āā. gr. j	065
Quininæ Sulph.,		
Ferri Reducti	āā. gr. xc	6 000

M. ft. cap. no. xxx.

Sig.—One after each meal.

In the treatment of chronic valvular disease:

℞[1] or

Strychninæ Sulph.	gr. 1/8	02
Sparteinæ Sulph.	gr. iij	20
Caffeinæ Citratæ	℥ss	2 00

M. ft. cap. no. xij.

Sig.—One every four hours.

In the treatment of menorrhagia and metrorrhagia:

℞[2] or

Strychninæ Sulph.	gr. ss	03
Hydrastininæ Hydrochl.	gr. x	65
Extracti Ergotæ	gr. xl	2 50

M. ft. cap. no. xx.

Sig.—One two hours after meals.

[1] Anders: Practice of Medicine.
[2] Ashton: Practice of Gynecology.

In the treatment of subinvolution of the uterus:

℞[1] or

Strychninæ Sulph.	gr. j	065
Ext. Ergotæ,		
Quininæ Sulph.	āā. gr. xxx	2000

M. ft. cap. no. xxx.
Sig.—One before each meal.

In the treatment of indigestion:

℞ or

Strychninæ Sulph.	gr. ss	03
Elix. Pepsini Arom.	q. s. f℥vj	180 00

M.
Sig.—Two (2) teaspoonfuls in water after meals.

In the treatment of palpitation, etc., in hysteric subjects:

℞[2] or

Strychninæ Sulph.	gr. ⅛	02
Zinci Valeratis	gr. x	65
Ext. Sumbul	gr. x	65
Ext. Hyoscyami	gr. v	32

M. ft. cap. no. x.
Sig.—One after each meal.

In the treatment of herpes zoster:

℞[3] or

Zinci Phosphidi,		
Ext. Nucis Vomicæ	āā. gr. x	65

M. ft. cap. no. xxx.
Sig.—One every three hours.

As a postoperative tonic:

℞[4] or

Hydrarg. Chlor. Corros.,		
Arseni Trioxidi	āā. gr. j	065
Ext. Nucis Vomicæ	gr. xxv	1600
Ferri et Quin. Cit.	gr. cc	13000

M. ft. cap. no. c.
Sig.—One after each meal.

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[1] Shoemaker: Materia Medica and Therapeutics.
[2] Anders: Practice of Medicine.
[3] Hughes: Practice of Medicine.
[4] Ashton: Practice of Gynecology.

In the treatment of constipation:

℞[1] or

Ext. Cascaræ Sag.	gr. xl	2 50
Ext. Nucis Vomicæ	gr. v	32
Ext. Belladon. Fol.	gr. ij	13
Resinæ Podophylli	gr. ij	13

M. ft. cap. no. xx.
Sig.—One at bedtime.

In a laxative preparation:

℞[2] or

Tinct. Nucis Vomicæ	f℥ss	15
Flext. Cascaræ Sag.	f℥j	30
Glycerini	f℥ss	15
Aquæ Chloroformi q. s.	f℥iij	90

M.
Sig.—Teaspoonful in water after meals.

Oleatum Hydrargyri.—See Hydrargyrum.
Oleoresina Aspidii.—See Aspidium.
Oleoresina Capsici.—See Capsicum.
Oleoresina Cubebæ.—See Cubeba.
Oleoresina Petroselini.—See Petroselinum.
Oleoresina Piperis.—See Piper.
Oleoresina Zingiberis.—See Zingiber.
Oleum Amygdalæ Amaræ.—See Amygdala Amara.
Oleum Amygdalæ Expressum.—See Amygdala.
Oleum Anisi.—See Anisum.
Oleum Aurantii.—See Aurantium.
Oleum Cadinum.—See next page.
Oleum Cajuput. Eng., Oil of Cajuput.
Average Dose.—8 minims (0.5 mil).
Oleum Cari.—See Carum.
Oleum Caryophylli.—See Caryophyllus.
Oleum Cassiæ.—See Cinnamomum.
Oleum Chenopodii. Oil of Chenopodium. Synonym, Oil of American Wormseed.
Average Dose.—3 minims (0.2 mil).
Oleum Coriandri.—See Coriandrum.
Oleum Cubebæ.—See Cubeba.
Oleum Eucalypti.—See Eucalyptus.
Oleum Fœniculi.—See Fœniculum.
Oleum Gossypii Seminis. Eng., Cotton-seed Oil.
Average Dose.—4 fluidrachms (15 mils).
Oleum Juniperi.—See p. 233.

[1] Ashton: Practice of Gynecology.
[2] Hughes: Practice of Medicine.

Oleum Lavandulæ.—See p. 234.
Oleum Limonis.—See Limon.
Oleum Lini.—See Linum.
Oleum Menthæ Piperitæ.—See Mentha Piperita.
Oleum Menthæ Viridis.—See Mentha Viridis.
Oleum Morrhuæ.—See p. 235.
Oleum Myristicæ.—See Myristica.
Oleum Olivæ.—See p. 235.
Oleum Picis Liquidæ Rectificatum.—See Pix Liquida.
Oleum Pimentæ. Eng., Oil of Pimenta. Synonym, Oil of Allspice.
Average Dose.—3 minims (0.2 mil).
Oleum Pini Pumilionis. Eng., Oil of Dwarf Pine Needles.
Oleum Ricini.—See p. 236.
Oleum Rosmarini. Eng., Oil of Rosemary.
Average Dose.—3 minims (0.2 mil).
Oleum Santali. Eng., Oil of Santal.
Average Dose.—8 minims (0.5 mil).
Oleum Sassafras.—See Sassafras.
Oleum Sesami. Eng., Sesame Oil. Synonym, Benne Oil.
Oleum Sinapis Volatile.—See Sinapis Nigra.
Oleum Terebinthinæ.—See Terebinthina.
Oleum Terebinthinæ Rectificatum.—See Terebinthina.
Oleum Theobromatis.—See p. 238.
Oleum Thymi. Eng., Oil of Thyme.
Average Dose.—3 minims (0.2 mil).
Oleum Tiglii.—See p. 238.

OLEUM CADINUM.

Latin, Oleum Cadinum (Gen., Olei Cadini). Eng., Oil of Cade. Synonym, Oil of Juniper Tar. A product of the dry distillation of the wood of *Juniperus Oxycedrus*. A brownish or dark-brown, thick liquid.

Therapeutic Action.—Antiseptic, irritant, expectorant.

Uses.—Employed externally in the treatment of chronic skin diseases, as eczema, etc., and for parasitic diseases, as tinea and scabies.

Administration.—It is usually prescribed with other agents, and well diluted with a bland ointment base.

The following illustrates:

Used in the treatment of ringworm of the scalp:

℞[1]		or	
Betanaphtholis	3ss		2
Olei Cadini	3j		4
Ung. Sulphuris	q. s.	3j	30

M.

Sig.—Apply as directed.

Used as an antiparasitic:

℞[2]		or	
Sulphuris Præcip.	3ij		8
Saponis Mollis,			
Olei Cadini	āā.	3j	4
Adipis Benzoinati	q. s.	3j	30

M.

Sig.—Apply as directed.

In the treatment of eczema of the feet and legs:

℞[3]		or	
Phenolis	gr. x		65
Olei Cadini	♏x		65
Picis Liquidæ	gr. xx		1 30
Ung. Aquæ Rosæ	q. s.	3j	30 00

M.

Sig.—Apply thoroughly twice a day.

OLEUM JUNIPERI.

Latin, Oleum Juniperi. Eng., Oil of Juniper. A volatile oil distilled from the ripe fruit of *Juniperus communis*.

Average Dose.—3 minims (0.2 mil).

Official Preparations.

Spiritus Juniperi. Eng., Spirit of Juniper. Contains 5 per cent. of the Oil.

Average Dose.—30 minims (2 mils).

Spiritus Juniperi Compositus. Eng., Compound Spirit of Juniper.

Average Dose.—2½ fluidrachms (10 mils).

Therapeutic Action.—Classed as a diuretic, diaphoretic, stomachic, antiseptic, etc.

Uses.—Has been used in the treatment of chronic nephritis, particularly when evidenced by dropsy; also for bronchitis, asthma, etc.

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[1] Stelwagon: Diseases of the Skin.
[2] *Ibid.*
[3] Ohmann-Dumesnil: Diseases of the Skin.

Administration.—Not often prescribed. The following illustrates a way of ordering:

In the treatment of the laryngo-bronchial irritation of influenza:

℞[1]		or	
Codeinæ Sulph.	gr. iv		26
Ammonii Chlor.	ʒv	19	00
Syr. Pruni Virg.	fʒij	60	00
Spir. Juniperi Comp.	q. s. fʒiv	120	00

M.

Sig.—Teaspoonful in water every three hours.

OLEUM LAVANDULÆ FLORUM.

Latin, Oleum Lavandulæ. Eng., Oil of Lavender. A volatile oil distilled from the fresh flowering tops of *Lavandula vera* or *Lavandula spica.*

Average Dose.—3 minims (0.2 mil).

Official Preparations.

Spiritus Lavandulæ. Eng., Spirit of Lavander. Contains 5 per cent. of the Oil.

Average Dose.—30 minims (2 mils).

Tinctura Lavandulæ Composita. Eng., Compound Tincture of Lavender. Oil of Lavender, 8 mils; Oil of Rosemary, 2 mils; Saigon Cinnamon, 20 Gm.; Clove, 5 Gm.; Nutmeg, 10 Gm.; Red Sanders, 10 Gm.; Alcohol and water, to make 1000 mils.

Average Dose.—30 minims (2 mils).

Oil of Lavender is contained in several other official preparations.

Therapeutic Action.—Stomachic, carminative.

Uses.—Principally employed as an adjuvant and flavoring agent, particularly in preparations for the relief of neurasthenia, hysteria, flatulence, etc.

Administration.—Not often used. The following will illustrate how it may be prescribed.

In the treatment of acute indigestion:

℞[2]		or	
Tinct. Opii Camph.	fʒiij		12
Spir. Ammoniæ Arom.,			
Spir. Ætheris	āā. fʒss		15
Tinct. Lavandulæ Comp.	q. s. fʒij		60

M.

Sig.—Teaspoonful well diluted every fifteen minutes until relieved.

[1] Anders: Practice of Medicine.

[2] Musser and Kelly: Practical Treatment.

OLEUM MORRHUÆ.

Latin, Oleum Morrhuæ (Gen., Olei Morrhuæ). Eng., Codliver Oil. Synonym, Oleum Jecoris Aselli. A fixed oil obtained from the fresh livers of *Gadus morrhua* and other species of *Gadus*.

Average Dose.—2½ fluidrachms (10 mils).

Official Preparation.

Emulsum Olei Morrhuæ. Eng., Emulsion of Codliver Oil. Contains 50 per cent. of the Oil.

Average Dose.—4 fluidrachms (15 mils).

Unofficial Preparation.

Emulsum Olei Morrhuæ cum Hypophosphitibus. Eng., Emulsion of Codliver Oil with Hypophosphites. Codliver Oil, 500 mils; Acacia, 125 Gm.; Calcium Hypophosphite, 10 Gm.; Potassium Hypophosphite, 5 Gm.; Sodium Hypophosphite, 5 Gm.; Oil of Gaultheria, 4 mils; Water, to make 1000 mils.

Average Dose.—4 fluidrachms (15 mils).

Therapeutic Action.—Emollient, nutrient, tonic, alterative.

Uses.—Extensively employed in the treatment of tuberculosis, chronic bronchitis, rachitis, etc. Sometimes used externally for chronic skin diseases, as eczema.

Administration.—A satisfactory way for the patient to take the emulsion is by first pouring into a graduated glass a tablespoonful of "Beef, Iron and Wine," and then pouring in the oil preparation. The wine envelops the thick emulsion so that it can be taken at one swallow, almost without taste. The wine preparation is, of course, of therapeutic advantage. Attention is directed to the so-called Wines of Codliver Oil and Tasteless Preparations that really contain none of the oil at all.

The Emulsions of Codliver Oil, particularly the one with hypophosphites, are seldom prepared extemporaneously. They are thick and hard to pour from a small-mouth bottle; so it is usually best to prescribe a pint, the druggist then giving an original package and merely putting on a new label.

OLEUM OLIVÆ.

Latin, Oleum Olivæ (Gen., Olei Olivæ). Eng., Olive Oil. Synonym, Impure or imitation Olive Oil is frequently called Sweet Oil or Malaga Oil. A fixed oil expressed from the ripe fruit of *Olea Europæa*.

Average Dose.—1 fluidounce (30 mils).

Olive Oil is employed in many official preparations.

Therapeutic Action.—Laxative, nutrient, emollient, lubricant.

Uses.—Employed in the treatment of tuberculosis, chronic constipation, obstructive jaundice, hyperchlorhydria, etc. Externally for indurative skin diseases, exanthematous eruptions, etc. It is a desirable vehicle for the solution or dilution of more active agents.

Administration.—Olive Oil is often recommended by the profession, but is seldom a prescription ingredient except as a solvent or diluent, as for croton oil, salol, etc. The following illustrates:

In the treatment of orchitis complicating mumps:

℞		or	
Guaiacolis	..... ♏xl		2|5
Olei Olivæ	.....q. s. f℥j		30|0

M.

Sig.—Apply a teaspoonful as directed.

OLEUM RICINI.

Latin, Oleum Ricini. Eng., Castor Oil. A fixed oil expressed from the seed of *Ricinus communis.*

Average Dose.—4 fluidrachms (15 mils).

Castor Oil is contained in Flexible Collodion.

Therapeutic Action.—Purgative, emollient, lubricant.

Uses.—Probably the most valuable and extensively used purgative in medicine. Particularly indicated after parturition and operations, and for acute digestive disturbances. Externally used in the treatment of burns, ulcers, chronic indurative skin diseases, conjunctivitis, and many other conditions.

Administration.—Among the various ways for the patient to take castor oil, probably the most satisfactory is to incorporate it with an ounce or two of the fresh or bottled pineapple-juice. It is also frequently taken in soda pop, orange-juice, etc. The claim is often made that a small dose occasions more abdominal inconvenience than a large one; so many practitioners never give less than a tablespoonful to an average child over one year old. In administering the oil to children, the first dose will frequently be vomited. If it is repeated promptly it will almost always be retained.

It is a valuable agent to check persistent vomiting resulting from

gastric irritation. The first one or two doses may be vomited and then a dose retained with a subsidence of the nausea.

Many so-called tasteless preparations are on the market. Some of them are more disagreeable than the pure oil.

Castor Oil often exhibits a constipating effect after the purgative action; so that it is sometimes advisable to give with it some cascara sagrada or other purgative.

It is frequently recommended by the physician as a purgative, but it is so well known and generally kept by the laity that it is not often a part of a regular prescription.

It is sometimes employed locally either alone or with other agents.

The so-called "tasteless" Castor Oil may be ordered as follows:

℞		or	
Olei Menth. Pip.	♏viij		50
Benzosulphinidi	gr. iv		26
Olei Ricini q. s.	f℥iv	120	00

M.

Sig.—Tablespoonful as directed.

An Emulsion of Castor Oil is said to be (?) less unpleasant to take, and more active than the amount of oil it represents.

℞		or
Olei Ricini	f℥iv	120
Olei Gaultheriæ	♏xv	1
Acaciæ	q. s.	
Syrupi	f℥vj	24
Aquæ q. s.	f℥viij	240

M. ft. emul.

Sig.—Tablespoonful as directed. (Shake-label.)

Oleum Menthæ Piperitæ, Oleum Aurantii Corticis, Oleum Limonis or other flavors may be substituted for the Oleum Gaultheriæ.

In burns, diphtheria, etc., of the conjunctiva:

℞		or
Olei Ricini	f℥j	30

Sig.—Drop in eyes every two hours.

In a surgical dressing for burns, ulcers, etc.:

℞		or
Bal. Peruviani	f℥iv	15
Olei Ricini q. s.	f℥iv	120

M.

Sig.—Apply freely as directed.

In the treatment of seborrhœa capitis:

℞[1]		or	
Resorcinolis	3j		4
Olei Ricini	f3j		4
Alcoholis	f℥iv		120

M.
Sig.—Apply as directed.

OLEUM THEOBROMATIS.

Latin, Oleum Theobromatis (Gen., Olei Theobromatis). Eng., Oil of Theobroma. Synonym, Cacao Butter. A fixed oil obtained from the roasted seeds of *Theobroma Cacao.*

Form.—A yellowish-white solid.

Odor and Taste.—A faint, agreeable odor, and a bland, chocolate-like taste.

Solubility.—Insoluble in water or alcohol.

Therapeutic Action.—Emollient, lubricant.

Uses.—Principally employed as a vehicle in the manufacture of suppositories. It is particularly adapted to this purpose, as it is a rather firm solid at ordinary temperatures, but readily melts at the temperature of the body.

Administration.—Suppositories with a base of Cacao Butter should be kept in a cool place, and before inserting they may be dipped in olive oil. If they are long held in the fingers they become too soft to insert. The following prescription illustrates the use of the drug:

℞		or	
Ext. Opii	gr. ij		130
Ext. Belladon. Fol.	gr. j		065
Olei Theobromatis	q. s.		

M. ft. suppos. no. iv.
Sig.—Use one twice daily.

Note that the amount of the oil is left to the discretion of the druggist.

OLEUM TIGLII.

Latin, Oleum Tiglii (Gen., Olei Tiglii). Eng., Croton Oil. A fixed oil expressed from the seed of *Croton Tiglium.*

Average Dose.—1 minim (0.05 mil).

[1] Stelwagon: Diseases of the Skin.

Therapeutic Action.—Drastic purgative, irritant, pustulant.

Uses.—Sometimes used to produce very active purgation, as in the treatment of uremia, apoplexy, tænia, etc.

Administration.—This is seldom prescribed except in cases of emergency, as where prompt catharsis is needed and the patient is unable to swallow the ordinary purgatives. It is usually diluted with about 30 to 60 times its volume of olive oil, or incorporated with glycerin.

As an active purgative, useful when the patient is unable to swallow ordinary remedies:

℞		or	
Olei Tiglii	..... ♏ viij		5
Olei Olivæ	.....q. s. f℥j		30 0

M.

Sig.—Teaspoonful every hour till effect.

This can be administered under almost any circumstances by allowing a few drops at a time to trickle down the base of the tongue.

As a purgative:

℞[1]		or	
Olei Tiglii	..... ♏ j		06
Glycerini	.....q. s. f℥j		30 00

M.

Sig.—Two (2) teaspoonfuls every hour till bowels act.

OPIUM.

Latin, Opium (Gen., Opii). Eng., Opium. The air-dried, milky exudation obtained by incising the unripe capsules of *Papaver somniferum* and its variety *album*, and yielding in its normal, moist condition, not less than 9.5 per cent. of anhydrous morphine.

Principal Constituents.—Morphine, Codeine, etc.

Incompatibles.—Alkalies, alkaline carbonates, salts of arsenic, copper, iron, lead, silver and zinc; mercuric chloride, tannic acid, potassium permanganate, lime-water, etc.

Average Dose.—1 grain (0.06 Gm.).

It will be noted that Powdered Opium and Granulated Opium contain about 10 per cent. of morphine, and that the Powder of Ipecac and Opium, the Tincture of Opium and the Tincture of Deodorized Opium represent 10 per cent. of these; so, contain about 1 per cent. of morphine.

[1] Ashton: Practice of Gynecology.

The extract contains about 20 per cent. of morphine, differing from other extracts, which are usually about five times the strength of the drug.

Opium differs from most other important vegetable drugs in having no fluidextract.

Official Preparations.

Opii Pulvis. Eng., Powdered Opium. A dark-colored powder containing from 10 to 10.5 per cent. of morphine.
Average Dose.—1 grain (0.06 Gm.).

Opium Deodoratum. Eng., Deodorized Opium. Synonym, Denarcotized Opium. Contains from 10 to 10.5 per cent. of morphine.
Average Dose.—1 grain (0.06 Gm.).

Opium Granulatum. Eng., Granulated Opium. Contains 10 to 10.5 per cent. of morphine.
Average Dose.—1 grain (0.06 Gm.).

Extractum Opii. Eng., Extract of Opium. A dark-colored powder containing about 20 per cent. of morphine.
Average Dose.—½ grain (0.03 Gm.).

Pulvis Ipecacuanhæ et Opii. Eng., Powder of Ipecac and Opium. Synonym, Dover's Powder. Powdered Opium, 10 Gm.; Ipecac, 10 Gm.; Sugar of Milk, 80 Gm. (Morphine about 1 per cent.)
Average Dose.—8 grains (0.5 Gm.).

Tinctura Opii. Eng., Tincture of Opium, Laudanum. Represents 10 per cent. of Granulated Opium (about 1 per cent. of morphine).
Average Dose.—8 minims (0.5 mil).

Tinctura Opii Camphorata. Eng., Camphorated Tincture of Opium, Paregoric. Powdered Opium, 4 Gm.; Benzoic Acid, 4 Gm.; Camphor, 4 Gm.; Oil of Anise, 4 mils; Glycerin, 40 mils; Diluted Alcohol, to make 1000 mils (about 0.04 per cent. of morphine).
Average Dose.—1 fluidrachm (4 mils).

Tinctura Opii Deodorati. Eng., Tincture of Deodorized Opium. Represents 10 per cent. of Deodorized Opium (about 1 per cent. of morphine).
Average Dose.—8 minims (0.5 mil).

Official Alkaloids and their Salts.

Morphina. Eng., Morphine. An alkaloid obtained from Opium. (Opium contains not less than 9.5 per cent. of Morphine.)
Form.—White prisms, needles or crystalline powder.
Odor and Taste.—Odorless. Bitter taste.
Solubility.—In 3340 parts of water or 210 parts of alcohol.
Incompatibles (also of the Salts of Morphine).—Alkalies, borates, chlorates, iodides, tannic acid, potassium permanganate, ferric chloride, gold and

sodium chloride, lead acetate, lead subacetate, magnesia, mercuric chloride, spirit of nitrous ether, silver nitrate.

Average Dose.—⅛ grain (0.008 Gm.).

Morphinæ Hydrochloridum (Gen., Morphinæ Hydrochloridi). Eng., Morphine Hydrochloride.

Form.—White needles or powder.

Odor and Taste.—Odorless and a bitter taste.

Solubility.—In 17.5 parts of water or 52 parts of alcohol.

Incompatibles.—See Morphina.

Average Dose.—⅛ grain (0.008 Gm.).

Morphinæ Sulphas (Gen., Morphinæ Sulphatis). Eng., Morphine Sulphate.

Form.—White, feathery acicular crystals or cubical masses.

Odor and Taste.—Odorless and a bitter taste.

Solubility.—In 15.5 parts of water or 565 of alcohol.

Incompatibles.—See Morphina.

Average Dose.—⅛ grain (0.008 Gm.).

Codeina. Eng., Codeine. An alkaloid obtained from opium.

Form.—White or nearly white crystals, prisms or powder.

Odor and Taste.—Odorless; faintly bitter taste.

Solubility.—In 120 parts of water or 2 of alcohol.

Incompatibles (also Salts of Codeine).—Alkalies, ammonium bromide or valerate, tannic acid, mercuric chloride; salts of copper, iron or lead; potassium permanganate, etc.

Average Dose.—½ grain (0.03 Gm.).

Codeinæ Phosphas (Gen., Codeinæ Phosphatis). Eng., Codeine Phosphate.

Form.—Needle-shaped crystals or powder.

Odor and Taste.—Odorless. A bitter taste.

Solubility.—In 2.3 parts of water or 325 of alcohol.

Incompatibles.—See Codeina.

Average Dose.—½ grain (0.03 Gm.).

Codeinæ Sulphas (Gen., Codeinæ Sulphatis). Eng., Codeine Sulphate.

Form.—Needle-shaped crystals, prisms or powder.

Odor and Taste.—Odorless. A bitter taste.

Solubility.—In 30 parts of water or 1280 of alcohol.

Incompatibles.—See Codeina.

Average Dose.—½ grain (0.03 Gm.).

Official Derivative Alkaloids, Prepared from Morphine, and Their Salts.

Æthylmorphinæ Hydrochloridum (Gen., Æthylmorphinæ Hydrochloridi). Eng., Ethylmorphine Hydrochloride. Synonyms, Ethylmorphine chloride, Dionin. The hydrochloride of an alkaloid prepared from morphine.

Form.—A white or yellowish powder.

Odor and Taste.—Odorless, bitter taste.

Solubility.—In 8 parts of water or 22 parts of alcohol.

Average Dose.—¼ grain (0.015 Gm.).

Apomorphinæ Hydrochloridum (Gen., Apomorphinæ Hydrochloridi). Eng., Apomorphine Hydrochloride. The hydrochloride of an alkaloid prepared from Morphine.

Form.—Grayish-white powder, acquiring a greenish tint on exposure to the light and air.

Odor and Taste.—Odorless, and a faintly bitter taste.

Solubility.—Soluble in 50 parts of water or alcohol; more soluble in hot water.

Incompatibles.—See Morphina.

Average Dose.—Expectorant, 1/20 grain (0.003 Gm.). Emetic, by mouth, 1/6 grain (0.01 Gm.). Emetic, by hypodermic, 1/12 grain (0.005 Gm.).

Diacetylmorphinæ. Eng., Diacetylmorphine. Synonym, Heroine. An alkaloid prepared from morphine.

Form.—A white crystalline powder.

Odor and Taste.—Odorless, slight taste.

Solubility.—In 1700 parts of water or 31 parts of alcohol.

Average Dose.—1/20 grain (0.003 Gm.).

Diacetylmorphinæ Hydrochloridum (Gen., Diacetylmorphinæ Hydrochloridi). Eng., Diacetylmorphine Hydrochloride. Synonym, Heroine Hydrochloride. The Hydrochloride of an alkaloid prepared from morphine.

Form.—A white crystalline powder.

Odor and Taste.—Odorless; a bitter taste.

Solubility.—Very soluble in water or alcohol.

Average Dose.—1/20 grain (0.003 Gm.).

Therapeutic Action.—Sedative, antispasmodic, anodyne, hypnotic, narcotic, diaphoretic.

Use.—The employment of opium and its preparations and alkaloids covers almost the entire field of medicine. Some of the conditions in which they are particularly employed are renal and intestinal colic, abdominal inflammation, convulsions, diarrhea, dysentery, cough, etc.

Toxicology.—The usual symptoms of acute opium poisoning are drowsiness, deepening into coma; slow pulse, contracted pupils, moist skin. During the stage of coma there is slow, stertorous breathing. There may be vomiting. Treatment: The unabsorbed drug should be removed, preferably by washing out the stomach with a solution of potassium permanganate (1:3000). A pint of this should be left in the stomach. Caffeine is probably the best physiological antidote, and may be given in the form of coffee by mouth or rectum. Other measures are the use of ammonia by mouth and inhalation, atropine, strychnine

or camphor by needle. Cold water to head and face, exercise, artificial respiration, etc. Apomorphine hydrochloride being a powerful hypnotic, should not be used as the emetic for opium poisoning except in cases of extreme urgency that are seen early.

Administration.—*Internally in solution.* The preparations most frequently used are the Tincture, the Camphorated Tincture and the Tincture of Deodorized Opium, Morphine Sulphate, Codeine Phosphate, Apomorphine Hydrochloride and Diacetylmorphine Hydrochloride. For action upon the central nervous system the preparations usually employed are Morphine Sulphate, Codeine Phosphate, Tincture of Opium and Tincture of Deodorized Opium. Some methods of prescribing are shown in the following:

As a sedative, hypnotic, etc.:

℞		or	
Codeinæ Phosphatis	gr. iv		26
Elixiris Aromatici	q. s. f℥j	30	00

M.

Sig.—Teaspoonful every four hours when necessary.

As a sedative, hypnotic, etc.:

℞		or	
Codeinæ Phosph.	gr. ij		13
Chlorali Hydrati	gr. xl	2	50
Sodii Bromidi	gr. lxxx	5	00
Aquæ	q. s. f℥j	30	00

M.

Sig.—Teaspoonful every four hours when necessary.

As a sedative in threatened abortion:

℞		or	
Chlorali Hydrati	gr. xl	2	5
Sodii Bromidi	gr. lxxx	5	0
Tinct. Opii Deod.	♏xl	2	5
Aquæ Chloroformi	q. s. f℥j	30	0

M.

Sig.—Teaspoonful night and morning when necessary.

As a hypnotic, analgesic, cough sedative and antispasmodic:

℞[1]		or	
Codeinæ Sulph.	gr. ss		03
Antipyrinæ	gr. xvj	1	00
Syr. Aurantii	q. s. f℥ij	60	00

M.

Sig.—Teaspoonful every two hours when needed. (For child 2 years old.)

[1] Ruhrah: Diseases of Children.

For action upon the respiratory system Apomorphine Hydrochloride is employed as a secretory stimulant. Diacetylmorphine Hydrochloride, Codeine Phosphate and Camphorated Tincture of Opium are employed as sedatives. Diacetylmorphine has the advantage of being less depressing, generally not affecting the intestinal functions, etc.

Some uses are shown in the following:

For cough, bronchitis, etc.:

℞		or
Potassii Citratis	ʒj	30
Limonis Succi	fʒj	30
Tinct. Opii Camph.	fʒss	15
Spir. Vini Gallici	fʒj	30
Syr. Acidi Citrici	q. s. fʒiv	120

M.

Sig.—Teaspoonful in water every two hours.

For an "irritative" cough:

℞		or
Diacetylmorph. Hydrochlor.	gr. ij	13
Ammonii Chloridi	ʒiss	6 00
Syr. Ipecacuanhæ	fʒij	8 00
Syr. Pruni Virg.	q. s. fʒiv	120 00

M.

Sig.—Teaspoonful every two hours till relieved.

For a "dry" cough:

℞		or
Apomorphinæ Hydrochlor.	gr. ss	03
Potassii Citratis	ʒiv	15 00
Limonis Succi	fʒiv	15 00
Syr. Acidi Citrici	q. s. fʒiij	90 00

M.

Sig.—Teaspoonful in water every two hours.

For an acute cough:

℞[1]		or
Codeinæ Sulph.	gr. iij	2
Tinct. Hyoscyami	fʒiij	12 0
Syr. Tolutani	fʒss	15 0
Aquæ	q. s. fʒiij	90 0

M.

Sig.—Teaspoonful every three hours.

[1] Musser and Kelly: Practical Treatment.

In the treatment of the laryngo-bronchial irritation of influenza:

℞[1]		or	
Codeinæ Sulph.	gr. iv		26
Ammonii Chlor.	3ij	8	00
Syr. Pruni Virg.	f℥ij	60	00
Spir. Juniperis Comp. q. s.	f℥iv	120	00

M.

Sig.—Teaspoonful in water every three hours.

In the treatment of bronchitis:

℞[2]		or	
Tinct. Opii Camph., Spir. Vini Gallici, Glycerini āā.	f℥j	30	

M.

Sig.—Teaspoonful in water every three hours.

In the treatment of cough:

℞		or	
Tinct. Opii Camph.	f℥iij	12	
Spir. Chloroformi	f℥iss	6	
Syrupi Tolutani	f℥j	30	
Aquæ q. s.	f℥iij	90	

M.

Sig.—Teaspoonful every two hours till relieved. (Shake-label.) (For a child 5 years old.)

In the treatment of spasmodic croup:

(For child 2 years old.)

℞[3]		or	
Ammonii Bromidi	3ss	2	
Tinct. Opii Camph.	f℥ss	2	
Tinct. Belladon. Fol.	♏xv	1	
Syr. Tolutani	f℥j	30	
Aquæ q. s.	f℥ij	60	

M.

Sig.—Teaspoonful in water every hour till relieved.

In the treatment of the cough of measles:

℞[4]		or	
Potassii Citratis	℥ss	15	
Limonis Succi	f℥j	30	
Tinct. Opii Camph., Syr. Ipecacuanhæ āā.	f℥ij	8	
Syr. Tolutani q. s.	f℥ij	60	

M.

Sig.—Teaspoonful in water every two hours.

[1] **Anders: Practice of Medicine.**
[2] **Musser and Kelly: Practical Treatment.**
[3] *Ibid.*
[4] **Anders: Practice of Medicine.**

For action upon the intestinal tract the Tincture of Opium, Tincture of Deodorized Opium, Camphorated Tincture of Opium and Morphine Sulphate are commonly used.

Some preparations are shown in the following:

In the treatment of diarrhea:

℞		or
Magnesii Sulph.	ʒvj	12
Tinct. Opii Deod.	f3j	4
Acidi Sulph. Arom.	f3iij	12
Aquæ Menth. Pip. q. s.	f℥vj	180

M.

Sig.—Tablespoonful in water every four hours till relieved.

In the treatment of diarrhea, dysentery, nausea, etc.:

℞		or
Bismuthi Subnit.	ʒiij	12
Tinct. Opii Camph.	f3iij	12
Spir. Chloroformi	f3ij	8
Spir. Vini Gallici	f3vj	23
Mist. Cretæ q. s.	f℥iij	90

M.

Sig.—Tablespoonful every three hours until relieved. (Shake-label.)

Used in the treatment of acute indigestion:

℞[1]		or
Tinct. Opii Camph.	f3iij	12
Spir. Ammoniæ Arom., Spir. Ætheris āā.	f℥ss	15
Tinct. Lavandulæ Comp. q. s.	f℥ij	60

M.

Sig.—Teaspoonful well diluted every fifteen minutes until relieved.

In the treatment of catarrhal enteritis of childhood:

℞[2]		or
Bismuthi Subnit.	gr. lxxx	5
Tinct. Opii Deod.	♏xvj	1
Misturæ Cretæ q. s.	f℥ij	60

M.

Sig.—Teaspoonful every two hours. (Shake-label.)

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[1] Musser and Kelly: Practical Treatment.

[2] Hughes: Practice of Medicine.

In the treatment of the diarrhea of typhoid fever:

℞[1]		or	
Bismuthi Subnit.	gr. clx	10	0
Phenolis Liq.	♏viij		5
Tinct. Opii Deod.	f℥j	4	0
Mucil. Acaciæ	f℥j	30	0
Aquæ	q. s. f℥iv	120	0

M.

Sig.—Teaspoonful every three hours. (Shake-label.)

In the treatment of enterocolitis:

℞[2]		or	
Bismuthi Subnit.	℥iij	12	
Tinct. Kino,			
Tinct. Opii Camph.	āā. f℥iss	45	
Misturæ Cretæ	q. s. f℥vj	180	

M.

Sig.—Tablespoonful every three hours. (Shake-label.)

Internally—Dry Form.—Powdered Opium and Powder of Ipecac and Opium, Morphine Sulphate and Codeine Phosphate and Sulphate are employed.

For action upon the nervous system, the Morphine or Codeine Salts or Powdered Opium are used.

For action upon the respiratory system, the Codeine Salts, Diacetylmorphine Hydrochloride and Powder of Ipecac and Opium are more commonly employed.

Some frequently used formulæ are shown in the following:

In the treatment of coryza:

℞[3]		or	
Ext. Belladon. Fol.	gr. ss		03
Camphoræ	gr. vj		40
Quininæ Sulph.,			
Pulv. Ipecac. et Opii	āā. gr. xij		80

M. ft. cap. no. xij.

Sig.—One every half-hour for four hours, then one every three hours.

Used as a diaphoretic in the treatment of colds and kindred conditions:

℞		or	
Camphoræ	gr. v		32
Pulv. Ipecac. et Opii	gr. x		65
Quininæ Hydrobrom.	gr. x		65

M. ft. cap. no. v.

Sig.—Take at bedtime.

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[1] Hughes: Practice of Medicine.

[2] *Ibid.*

[3] Musser and Kelly: Practical Treatment.

Used in the treatment of influenza:

℞[1]		or	
Phenylis Salicyl.,			
Acetphenetidinæ	āā. gr. xlv	3	0
Pulv. Ipecac. et Opii	gr. viij		5

M. ft. cap. no. xv.
Sig.—One every three hours.

With purgative to prevent griping:

℞		or	
Hydrarg. Chlor. Mitis.	gr. v		32
Ext. Colocynth. Comp.	gr. v		32
Pulv. Ipecac. et Opii	gr. x		65

M. ft. cap no. iv.
Sig.—One every hour tonight.

By Rectum.—The Extract of Opium is used in suppositories or the Tincture of Opium is administered in enemas.

In the treatment of threatened abortion:

℞		or	
Extracti Opii	gr. ij		13
Olei Theobromatis	q. s.		

M. ft. suppos. no. iv.
Sig.—One night and morning.

In the treatment of acute cystitis, pelvic peritonitis, etc.:

℞		or	
Ext. Belladon. Fol.	gr. j		065
Ext. Opii	gr. ij		130
Olei Theobromatis	q. s.		

M. ft. suppos. no. iv.
Sig.—One night and morning when necessary.

The Tincture of Opium and Morphine are frequently used in preparations for local application. The following are given to illustrate some common usage:

In the treatment of epididymitis:

℞[2]		or	
Tincturæ Aconiti,			
Tincturæ Opii	āā. f℥j		30
Liq. Plumbi Subacet.	f℥ij		8
Aquæ Dest.	q. s. f℥vj		180

M.
Sig.—Keep applied on cotton.

[1] Musser and Kelly: Practical Treatment.
[2] White and Martin: Genito-urinary and Venereal Diseases.

In the treatment of erythema venenatum:

℞[1]		or	
Morphinæ Sulph.	gr. v		32
Bismuthi Subnit.	ʒj	4	00
Ung. Aquæ Rosæ	q. s. ℥j	30	00

M.
Sig.—Apply in a thin layer.

In the treatment of gonorrhea:

℞[2]		or	
Zinci Sulphatis	gr. xv	1	0
Plumbi Acetatis	gr. xx	1	3
Tincturæ Opii,			
Tincturæ Catechu	āā. fʒij	8	0
Aquæ	q. s. fʒvj	180	0

M.
Sig.—(Shake-label).
Inject after urination.

OXYGENIUM.

Latin, Oxygenium. Eng., Oxygen. A colorless, odorless, and tasteless gaseous element.

PANCREATINUM.

Latin, Pancreatinum. Eng., Pancreatin. A mixture of enzymes naturally existing in the pancreas of warm-blooded animals, usually obtained from the fresh pancreas of the hog (*Sus scrofa*) or the ox (*Bos taurus*).

It converts not less than 25 times its own weight of starch into soluble carbohydrates.

A cream-colored powder having a faint, peculiar, not unpleasant odor and a somewhat meat-like taste.

Average Dose.—8 grains (0.5 Gm.).

Therapeutic Action.—Digestant.

Uses.—To aid digestion and to predigest food. Not often prescribed as such, but is employed in the form of the various ready-prepared or proprietary preparations.

PARAFFINUM.

Latin, Paraffinum. Eng., Paraffin.

A colorless, tasteless mass usually obtained from petroleum.

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[1] Ohmann-Dumesnil: Diseases of the Skin.
[2] White and Martin: Genito-urinary and Venereal Diseases.

PARAFORMALDEHYDUM.

Latin, Paraformaldehydum. Eng., Paraformaldehyde.

A polymeric form of formaldehyde.

White friable masses, or a powder, having a faint odor of formaldehyde.

On heating it is partly converted into formaldehyde and partly sublimed unchanged.

Used principally as the prepared "Formaldehyde Troches."

See Formaldehyde.

PARALDEHYDUM.

Latin, Paraldehydum. Eng., Paraldehyde.

A colorless liquid having a strong characteristic odor and a burning then cooling taste.

Average Dose.—30 minims (2 mils).

Paraldehyde is usually prescribed in the form of the National Formulary Preparation—

Elixir Paraldehydi (N. F.). Eng., Elixir of Paraldehyde. Contains 25 per cent. of the drug.

Average Dose.—2 fluidrachms (8 mils).

Therapeutic Action.—Hypnotic, sedative, antiseptic.

Uses.—Employed in the treatment of alcoholic psychoses, dementia, hysteria, etc.

Administration.—The odor and taste of paraldehyde are often considered decidedly objectionable both by patient and attendants.

Usually ordered as the Elixir alone, as in the following for the treatment of alcoholic psychosis, hysteria, etc.:

℞ or

Elixir Paraldehydi (N. F.) ..... f℥ij 60|

Sig.—Two (2) teaspoonfuls in water every three hours till effect.

PELLETIERINÆ TANNAS.

See Granatum, p. 176.

PEPO.

Latin, Pepo. Eng., Pepo. Synonym, Pumpkin Seed. The ripe seed of *Cucurbita Pepo.*

Average Dose.—1 ounce (30 Gm.).

Therapeutic Action.—Tænifuge.

Uses.—Sometimes used to remove tape-worms. Seldom prescribed, as more reliable agents are usually available.

PEPSINUM.

Latin, Pepsinum (Gen., Pepsini). Eng., Pepsin. A mixture containing a proteolytic ferment or enzyme obtained from the glandular layer of the fresh stomach of the hog (*Sus scrofa*). It digests not less than 3000 times its own weight of freshly coagulated and disintegrated egg-albumin.

Form.—White or yellowish scales, grains or powder.

Odor and Taste.—Slight odor and taste.

Solubility.—Soluble or almost entirely soluble in about 50 parts of water. More soluble in water acidulated with Hydrochloric Acid. Insoluble in alcohol.

Incompatibles.—Alcohol, tannic acid, alkalies or alkaline carbonates, etc.

Average Dose.—8 grains (0.5 Gm.).

Some Unofficial Preparations.

Elixir Digestivum Compositum (N. F.). Eng., Compound Digestive Elixir. Synonym, Elixir of Lactated Pepsin. A pleasantly flavored, red-colored elixir containing Pepsin, Pancreatin, Diastase, etc.
Average Dose.—2 fluidrachms (8 mils).

Liquor Pepsini (N. F.). Eng., Solution of Pepsin. Contains Pepsin, Diluted Hydrochloric Acid, Glycerin and Water.
Average Dose.—2 fluidrachms (8 mils).

Liquor Pepsini Aromaticus (N. F.). Eng., Aromatic Solution of Pepsin. Contains about the same as Solution of Pepsin with the addition of cloves, cinnamon, etc.
Average Dose.—2 fluidrachms (8 mils).

Pepsinum Saccharatum (N. F.). Eng., Saccharated Pepsin. Pepsin, 10 Gm.; Sugar of Milk, 90 Gm.
Average Dose.—15 grains (1 Gm.).

Therapeutic Action.—Digestant.

Uses.—As an aid to gastric digestion and for the predigestion of foods. The value of many long-used Pepsin preparations and the necessity for often using it at all have been seriously questioned by good authority. The Compound Digestive Elixir seems to be an incompatible mixture, yet it is possibly the most largely used pharmaceutical preparation in the country.

Administration.—The following are given more to illustrate the present employment of pepsin and its preparations than to offer the formulæ for indiscriminate use:

℞		or	
Liq. Pepsini Arom.	f℥vj		180

Sig.—Two (2) teaspoonfuls in water after meals.

Or:

℞		or	
Acidi Hydrochlor. Dil.	f℥vj		23
Liq. Pepsini Arom.	q. s. f℥vj		180

M.

Sig.—Two (2) teaspoonfuls in water after meals.

Or:

℞		or	
Tinct. Nucis Vom.,			
Acidi Hydrochlor. Dil.	ää. f℥iv		15
Liq. Pepsini Arom.	q. s. f℥vj		180

M.

Sig.—Two (2) teaspoonfuls in water after meals.

In digestive disturbance:

℞[1]		or	
Pepsini	℥ij		8
Acidi Hydrochlor. Dil.	f℥iiss		9
Tinct. Nucis Vomicæ,			
Glycerini	ää., f℥iss		6
Aquæ	q. s. f℥ij		60

M.

Sig.—Teaspoonful in water after meals.

As a digestant:

℞[2]		or	
Pepsini	℥iv		15
Acidi Hydrochlor. Dil.	f℥iv		15
Glycerini	q. s. f℥iv		120

M.

Sig.—Teaspoonful in water after meals.

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[1] Anders: Practice of Medicine.

[2] Shoemaker: Materia Medica and Therapeutics.

To aid digestion:

℞[1]		or	
Pepsini	ʒj	4	00
Acidi Hydrochlor. Dil.	fʒiv	15	00
Strychninæ Sulph.	gr. ss		03
Glycerini	fʒss	15	00
Aquæ Chloroformi q. s.	fʒiij	90	00

M.

Sig.—Teaspoonful in water after meals.

Or:

℞		or	
Pepsini	ʒij	8	
Acidi Hydrochlor. Dil., Tinct. Nucis Vom., Glycerini āā.	fʒj	30	
Aquæ q. s.	fʒvj	180	

M.

Sig.—Teaspoonful in water after meals.

PETROLATUM.

Latin, Petrolatum (Gen., Petrolati). Eng., Petrolatum. Synonym, Petroleum Jelly, Vaselin, Cosmoline, etc.

A purified mixture of semisolid hydrocarbons obtained from petroleum.

Form.—An unctuous mass, varying in color from yellowish to light amber.

Odor and Taste.—Odorless and tasteless.

Solubility.—Insoluble in water or alcohol.

Petrolatum Album. Eng., White Petrolatum. A white, unctuous mass.

Odor and Taste and Solubility.—Same as Petrolatum.

Petrolatum Liquidum. Eng., Liquid Petrolatum. Synonym, Hydrocarbon Oil, Liquid Paraffin, American Oil, Russian Oil, etc.

Form.—A colorless, oily liquid.

Odor and Taste.—Odorless and Tasteless.

Solubility.—Insoluble in water or alcohol.

Average Dose.—4 fluidrachms (15 mils).

The Heavy and Light Liquid Petrolatum are recognized.

Therapeutic Action.—Emollient, lubricant, laxative.

Uses.—Petrolatum is principally used as a vehicle and lubricant, though its emollient action is a factor in its selection. The Liquid Petrolatum is now extensively employed in the treatment of chronic constipation.

[1] Hughes: Practice of Medicine.

Administration.—The following illustrates the employment of these agents:

In the treatment of pruritus:

℞[1]		or	
Phenolis,			
Mentholis	āā. gr. xx	1	3
Petrolati	q. s. ℥j	30	00

M. tere bene.
Sig.—Apply locally.

In the treatment of scabies:

℞[2]		or	
Sulphuris Præcip.,			
Betanaphtholis	āā. ℥ss	2	
Petrolati	q. s. ℥j	30	00

M.
Sig.—Apply as directed.

As a vehicle for a nasal spray:

℞		or	
Camphoræ	gr. iv		13
Eucalyptolis,			
Ol. Pini Pum.,			
Ol. Menth. Pip.	āā. gtt. iv		13
Petrolati Liq.	q. s. f℥iv	120	00

M.
Sig.—Spray nose every four hours.

As a laxative:

℞		or	
Petrolati Liq. Opt.	f℥viij	240	

Sig.—Tablespoonful night and morning.

PETROSELINUM.

Latin, Petroselinum. Eng., Parsley Fruit. Synonym, Parsley Seed. The dried ripe fruit of *Petroselinum sativum.*

Official Preparation.

Oleoresinæ Petroselini. Eng., Oleoresin of Parsley Fruit. Synonym, Liquid Apiol.

Average Dose.—8 minims (0.5 mil).

[1] Ashton: Practice of Gynecology.
[2] Hughes: Practice of Medicine.

Therapeutic Action.—Emmenagogue.

Uses.—In the treatment of amenorrhea.

Administration.—The oleoresin under the name of apiol has long been in use. It is usually administered in capsules in combination with other agents.

PHENOL.

Latin, Phenol (Gen., Phenolis). Eng., Phenol. Synonym, Carbolic acid. Formula, C_6H_5OH.

Obtained from coal-tar by fractional distillation and subsequent purification, or made synthetically.

Form.—Colorless, needle-shaped crystals or crystalline mass, sometimes acquiring a reddish tint. This does not seem to impair its efficiency. It melts when heated, but recrystallizes at about 100° F.

Odor and Taste.—A characteristic, somewhat aromatic odor. When well diluted with water, a sweetish taste with a slightly burning after-taste.

Solubility.—In 15 parts of water. Freely soluble in alcohol, glycerin, oils, etc.

Incompatibles.—Albumin, collodion, iron salts; when triturated with the following it yields a liquid or soft mass: acetanilide, acetphenetidin, antipyrine, camphor, hydrated chloral, lead acetate, menthol, phenyl salicylate, resorcinol, sodium phosphate, thymol, terpin hydrate, and urethane.

Average Dose.—1 grain (0.06 Gm.).

Official Preparations.

Phenol Liquefactum (Gen., Phenolis Liquefacti). Eng., Liquefied Phenol. A liquid obtained by melting phenol and adding 10 per cent. of water. It contains not less than 87 per cent. of C_6H_5OH.

Form.—A colorless liquid which may develop a slight reddish tint.

Odor and Taste.—See Phenol.

Solubility.—In 12 parts of water, miscible in all proportions with alcohol or glycerin. When diluted with an equal volume of glycerin it is miscible with water.

Incompatibles.—See Phenol.

Average Dose.—1 minim (0.05 mil).

Glyceritum Phenolis. Eng., Glycerite of Phenol. Liquefied Phenol, 20 mils; Glycerin, 80 mils.

Average Dose.—5 minims (0.3 mil).

Unguentum Phenolis. Eng., Ointment of Phenol. Contains about 2 per cent. of Phenol.

Therapeutic Action.—Antiseptic, germicide, local anesthetic, caustic, antiemetic.

Uses.—*Internally.*—For nausea, diarrhea, dysentery, typhoid fever, etc. *Locally.*—For otitis media, ulcers, pruritus, endometritis, and various skin diseases. It is used for sterilizing instruments, excretions, etc.

Toxicology.—Toxic amounts of liquefied phenol are frequently taken either through error or with suicidal intent. Among the symptoms are: Odor of the drug, the white areas around the mouth or on the mucous membrane of the mouth and throat, if patient is seen early. There may also be depression, collapse, weak pulse, lowered temperature, and smoky-colored urine. Vomiting may occur. Large amounts may cause prompt collapse and death. Treatment: The stomach should be washed out with about a 20 per cent. solution of alcohol, then demulcents given and the patient stimulated with ammonia, strychnine, atropine, etc., as indicated. The body should be kept warm. It should be remembered that alcohol is an antidote to the local action of the drug, but does not prevent the absorption and systemic effects; so alcohol should not merely be administered, but removed (with the phenol) from the stomach. Poisoning has occurred from absorption from wet dressings containing Phenol.

Administration.—In prescribing it is desirable for the sake of correctness to remember that Phenol is a solid, so should be prescribed in grains, and that when it is desired to prescribe by minims, Liquefied Phenol must be specified.

The former is the preparation that should generally be used in ointments, oily liquids, etc., while the latter is often the more convenient preparation for other solutions.

Unfortunate results have sometimes followed the prescribing of an excess of Phenol in an aqueous liquid. Not more than 5 per cent. should be ordered in water unless glycerin is used to facilitate solution. It has been claimed on good authority that it requires several hours for complete solution of Phenol in water to take place; so, if possible, it should be allowed to stand some time after mixing, before it is used.

Ointments should always be made by melting both the Phenol crystals and the vehicle, and effecting the solution while in this state. Unpleasant results have frequently followed the use of an ointment made by the cold incorporation of the Liquefied Phenol with Petrolatum or other fatty vehicles. Solution may not be ef-

fected, but small drops of the liquid distributed through the vehicle. Solution of the drug was at one time extensively used as a wet dressing and many cases of poisoning occurred, both local (as gangrene) and systemic, from absorption. When the solution is sufficiently strong to coagulate the proteids of the surface, absorption is retarded, but weak solution may admit of sufficient absorption to cause toxic symptoms. Some methods of using Phenol are shown in the following:

Solutions in water up to 5 per cent. may be ordered as:

℞		or
Phenolis Liq.	f℥iss	6
Aquæ Dest.	q. s. f℥iv	120

M.
Sig.—Apply as directed.

Solutions in water stronger than 5 per cent. may be ordered as:

℞		or
Phenolis Liq.	f℥iij	12
Glycerini	f℥iij	12
Aquæ Dest.	q. s. f℥iv	120

M.
Sig.—Apply as directed. (Shake-label.)

As a local application in otitis:

℞		or
Phenolis Liq.	♏xij	75
Glycerini	q. s. f℥ss	15 00

M.
Sig.—Two (2) drops in ear twice daily if necessary.

As a local application, as for tonsillitis, etc.

℞		or
Phenolis Liq.	♏xxv	1 5
Tinct. Iodi	f℥iv	15 0
Glycerini	q. s. f℥j	30 0

M.
Sig.—Apply as directed.

Used to allay itching in the treatment of smallpox:

℞[1]		or
Phenolis Liq.	f℥j	4
Glycerini	f℥j	4
Alcoholis	f℥j	30
Aquæ	q. s. f℥ij	180

M.
Sig.—Use locally.

[1] Musser and Kelly: Practical Treatment.

In the treatment of gonorrhea:

℞[1] or

Hydrarg. Chlor. Corros.	gr. ss		03
Phenolis	gr. xij		80
Zinci Phenolsulph.	gr. xxx	2	00
Aquæ Dest. q. s.	f℥vj	180	00

M.

Sig.—Use as directed. (Not to be taken.)

Patient should be instructed to inject after urination.

In the treatment of alopecia:

℞[2] or

Resorcinolis	gr. lxxx	5	0
Phenolis	gr. xx	1	3
Spir. Myrciæ q. s.	f℥iv	120	0

M.

Sig.—Apply as directed.

In the treatment of diarrhea of typhoid fever:

℞[3] or

Bismuthi Subnit.	gr. clx	10	0
Phenolis Liq.	♏viij		5
Tinct. Opii Deod.	f℥j	4	0
Mucil. Acaciæ	f℥j	30	0
Aquæ q. s.	f℥iv	120	0

M.

Sig.—Teaspoonful every three hours. (Shake-label.)

In the treatment of skin lesions of syphilis:

℞[4] or

Hydrarg. Chlor. Mitis	℥j	4	
Ung. Zinci Oxidi	℥iv	15	
Ung. Phenolis q. s.	℥j	30	

M.

Sig.—Apply locally.

In the treatment of eczema of the feet and legs:

℞[5] or

Phenolis	gr. x		65
Olei Cadini	♏x		65
Picis Liquidæ	gr. xx	1	30
Ung. Aquæ Rosæ q. s.	℥j	30	00

M.

Sig.—Apply thoroughly twice a day.

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[1] White and Martin: Genito-urinary and Venereal Diseases.
[2] Stelwagon: Diseases of the Skin.
[3] Hughes: Practice of Medicine.
[4] White and Martin: Genito-urinary and Venereal Diseases.
[5] Ohmann-Dumesnil: Diseases of the Skin.

In the treatment of pruritus:

℞[1]		or
Phenolis,		
Mentholis	āā. gr. xx	1|3
Petrolati	q. s. ℥j	30|0

M. tere bene.
Sig.—Apply locally.

PHENOLSULPHONATES, OFFICIAL.

SODII PHENOLSULPHONAS (Gen., Sodii Phenolsulphonatis). Eng., Sodium Phenolsulphonate. Synonym, Sodium Sulphocarbolate.

Form.—Colorless prisms.

Odor and Taste.—Odorless. A cooling, saline, slightly bitter taste.

Solubility.—In 4.2 parts of water or about 140 of alcohol.

Average Dose.—4 grains (0.25 Gm.).

ZINCI PHENOLSULPHONAS (Gen. Zinci Phenolsulphonatis). Eng., Zinc Phenolsulphonate. Synonym, Zinc Sulphocarbolate.

Form.—Colorless prisms or crystals.

Odor and Taste.—Odorless. An astringent, metallic taste.

Solubility.—In 1.6 parts of water or 1.8 of alcohol.

Average Dose.—2 grains (0.125 Gm.).

Therapeutic Action.—Classed as intestinal antiseptic and astringent.

Uses.—Sometimes used in the treatment of diarrhea, dysentery, typhoid fever, etc.

Administration.—These are usually prescribed in capsules, sometimes in solution. Tablets of various sizes are on the market.

PHENOLPHTHALEINUM.

Latin, Phenolphthaleinum (Gen., Phenolphthaleini). Eng., Phenolphthalein. A phenol derivative.

Form.—A white or faintly yellowish-white, crystalline powder.

Odor and Taste.—Odorless and tasteless.

Solubility.—Almost insoluble in water. Soluble in 13 parts of alcohol.

Average Dose.—2½ grains (0.15 Gm.).

Therapeutic Action.—Purgative.

Uses.—Promotes the emptying of the intestinal tract, particularly in chronic constipation.

Administration.—Tablets from one to five grains are on the market, and are a convenient form of using the drug. It is fre-

[1] Ashton: Practice of Gynecology.

quently prescribed in powder or capsules, alone, or with other agents. The following will illustrate.

For chronic constipation:

℞
Tab. Phenolphthaleini (3 gr.) ..... no. xx.
Sig.—One every night when necessary.

As a purgative:

℞ or
Hydrarg. Chlor. Mitis,
Phenolphthaleini,
Rhei Pulv. .....āā. gr. v | 3
M. ft. cap. no. iij.
Sig.—Take an hour apart.

PHENYLIS SALICYLAS.

See Acidum Salicylicum.

PHOSPHORUS.

Latin, Phosphorus. Eng., Phosphorus.
Average Dose.—1/120 grain (0.0005 Gm.).

Official Preparation.

Pilulæ Phosphori. Eng., Pills of Phosphorus. Each pill contains 1/100 grain (0.0006 Gm.) of the drug.
Average Dose.—1 pill.

Therapeutic Action.—Classed as a nerve stimulant and reconstituent.

Uses.—Has been recommended for the treatment of rachitis, osteomalacia, neurasthenia, impotence, etc.

Administration.—It is seldom if ever that Phosphorus should be prescribed as such by the physician, as few druggists are equipped to handle it. The official pills and many unofficial preparations containing it can be obtained.

Phosphorus is probably best ordered as:

℞
Pil. Phosphori ..... no. c.
Sig.—One after each meal.

PHYSOSTIGMA.

Latin, Physostigma. Eng., Physostigma. Synonyms, Calabar Bean, Ordeal Bean. The ripe dried seeds of *Physostigma venenosum.*

Average Dose.—1½ grains (0.1 Gm.).

Official Preparations and Constituent.

Extractum Physostigmatis. Eng., Extract of Physostigma. A powder.
Average Dose.—⅛ grain (0.008 Gm.).

Tinctura Physostigmatis. Eng., Tincture of Physostigma. Represents 10 per cent. of the drug.
Average Dose.—15 minims (1 mil).

Physostigminæ Salicylas. Eng., Physostigmine Salicylate. Synonym, Eserine Salicylate. The Salicylate of an alkaloid obtained from Physostigma.
Average Dose.—1/60 grain (0.001 Gm.).

Therapeutic Action.—Myotic and peristaltic.

Uses.—The salt of Physostigmine is used to contract the pupils in the treatment of various eye conditions, and to produce purgation and combat intestinal distention, particularly after abdominal operations and in peritonitis, eclampsia, etc.

Administration.—The Salicylate of Physostigmine is frequently employed by the physician hypodermically or otherwise, but is not often prescribed.

PILOCARPUS.

Latin, Pilocarpus. Eng., Pilocarpus. Synonym, Jaborandi. The dried leaflets of *Pilocarpus jaborandi* or of *Pilocarpus microphyllus.*

Principal Constituents.—Contains not less than 0.6 per cent. of alkaloids, the most important of which is Pilocarpine.

Average Dose.—30 grains (2 Gm.).

Official Preparation and Alkaloidal Salts.

Fluidextractum Pilocarpi. Eng., Fluidextract of Pilocarpus.
Average Dose.—30 minims (2 mils).

Pilocarpinæ Hydrochloridum. Eng., Pilocarpine Hydrochloride. The hydrochloride of an alkaloid obtained from Pilocarpus.
Form.—Colorless crystals.
Odor and Taste.—Odorless. A faintly bitter taste.
Solubility.—In 0.3 part of water or 3 parts of alcohol.
Incompatibles.—Alkalies, iodides, gold salts, mercuric and mercurous chloride, potassium permanganate, silver nitrate, tannic acid.

Average Dose.—By mouth, 1/6 grain (0.01 Gm.); hypodermic, 1/12 grain (0.005 Gm.).

Pilocarpinæ Nitras. Eng., Pilocarpine Nitrate.

Form, Odor, Taste, Incompatibility and Dose.—See Pilocarpinæ Hydrochloridum.

Solubility.—In 4 parts of water or 75 parts of alcohol.

Therapeutic Action.—Diaphoretic, diuretic, sialagogue, myotic.

Uses.—Its employment is largely confined to cases when prompt diaphoresis is urgently indicated, as in uremia, convulsions, etc.

Administration.—Seldom prescribed. Its use is largely confined to hypodermic tablets of Pilocarpine salts administered by the physician himself. It should be remembered that it is a very dangerous drug.

Pilulæ Asafœtidæ.—See Asafœtida.
Pilulæ Catharticæ Compositæ.—See Colocynthis.
Pilulæ Ferri Carbonatis.—See Ferrum.
Pilulæ Ferri Iodidi.—See Ferrum.
Pilulæ Phosphori.—See Phosphorus.
Pilulæ Rhei Compositæ.—See Rheum.

PIPER.

Latin, Piper. Eng., Pepper. Synonym, Black Pepper. The dried, unripe fruit of *Piper nigrum.*

Average Dose.—8 grains (0.5 Gm.).

Official Constituent.

Oleoresina Piperis. Eng., Oleoresin of Pepper.

Average Dose.—½ grain (0.03 Gm.).

Therapeutic Action.—Carminative, stomachic, irritant.

Uses.—Sometimes employed with other agents for its stomachic effect.

Administration.—The following will illustrate the use of the drug.

℞[1]		or
Arseni Trioxidi	gr. ij	13
Piperis Pulv.,		
Ext. Gentianæ	ää. ʒij	8|00
M. ft. cap. no. lx.		
Sig.—One after each meal.		

[1] Ohmann-Dumesnil: Diseases of the Skin.

PIX LIQUIDA.

Latin, Pix Liquida (Gen., Picis Liquidæ). Eng., Tar. A product obtained by the destructive distillation of the wood of *Pinus palustris* and other species of *Pinus*.

Form.—A blackish-brown semi-liquid.

Odor and Taste.—Empyreumatic, terebinthinate odor; sharp, empyreumatic taste.

Solubility.—Only slightly soluble in water. Almost entirely soluble in alcohol.

Average Dose.—8 grains (0.5 Gm.).

Official Preparations.

Syrupus Picis Liquidæ. Eng., Syrup of Tar. Represents about 0.5 per cent. of tar.
Average Dose.—1 fluidrachm (4 mils).

Unguentum Picis Liquidæ. Eng., Tar Ointment. Contains 50 per cent. of tar.

Oleum Picis Liquidæ Rectificatum. Eng., Rectified Oil of Tar. A volatile oil distilled from tar.
Average Dose.—3 minims (0.2 mil).

Therapeutic Action.—Antiseptic, irritant, expectorant, diuretic.

Uses.—Tar or its preparations are used in the treatment of many skin diseases, particularly of the chronic type; also for coughs, bronchitis and kindred conditions.

Administration.—The following will illustrate the manner of prescribing:

In the treatment of eczema of the feet and legs:

℞[1]		or	
Phenolis	gr. x		65
Olei Cadini	♏x		65
Picis Liquidæ	gr. xx	1	30
Ung. Aquæ Rosæ	℥j	30	00

M.

Sig.—Apply thoroughly twice a day.

[1] Ohmann-Dumesnil: Diseases of the Skin.

In the treatment of ecthyma:

℞[1]		or	
Acidi Borici	gr. x		65
Bismuthi Subnit.	ʒj	4	00
Picis Liquidæ	gr. xx	1	30
Ung. Aquæ Rosæ	q. s. ʒj	30	00

M.

Sig.—Apply on a cloth twice a day.

PLUMBUM.

The metal is not official, but the Pharmacopœia contains the following:

Official Salts and Preparations.

PLUMBI ACETAS. Eng., Lead Acetate. Synonym, Sugar of Lead.

Form.—Colorless prisms, plates or powder.

Odor and Taste.—A faintly acetous odor and a sweetish, astringent, afterward metallic taste.

Solubility.—In 1.4 parts of water or 38 parts of alcohol.

Incompatibles.—Acids, alkalies, carbonates, chlorides, citrates, iodides, phosphates, sulphates, sulphites, tartrates, hydrated chloral, resorcinol, phenol, etc.

Average Dose.—1 grain (0.06 Gm.).

LIQUOR PLUMBI SUBACETATIS. Eng., Solution of Lead Subacetate. Synonym, Goulard's Extract. An aqueous liquid containing about 25 per cent. of Lead Subacetate.

Incompatibles.—See Plumbi Acetas.

LIQUOR PLUMBI SUBACETATIS DILUTUS. Eng., Dilute Solution of Lead Subacetate. Synonym, Lead-water. An aqueous solution containing about 1 per cent. of Lead Subacetate.

PLUMBI OXIDUM. Eng., Lead Oxide. Synonym, Litharge.

Form.—A yellowish powder.

Odor and Taste.—Odorless and Tasteless.

Solubility.—Almost insoluble in water or alcohol.

EMPLASTRUM PLUMBI. Eng., Lead Plaster. Synonym, Diachylon Plaster. Lead Acetate, 60 Gm.; Soap, 100 Gm.; Water, sufficient quantity.

UNGUENTUM DIACHYLON. Eng., Diachylon Ointment. Lead Plaster, 50 Gm.; Oil of Lavender Flowers, 1 Gm.; White Petrolatum, 49 Gm. Lead Plaster is also contained in some other preparations.

Therapeutic Action.—Astringent and local sedative.

Uses.—Employed in the treatment of diarrhea, dysentery, gonorrhea, vaginitis, various skin diseases, bruises, sprains, erysipelas, local infections, etc.

[1] Ohmann-Dumesnil: Diseases of the Skin.

Administration.—Lead Acetate, Lead Plaster and the solutions of the Subacetate are the preparations most frequently used.

In the treatment of furuncle:

℞[1]		or
Ichthyolis	3j	4
Empl. Plumbi	3ij	8
Empl. Resinæ	3j	4

M.
Sig.—Apply as directed.

In the treatment of epididymitis:

℞[2]		or
Tincturæ Aconiti,		
Tincturæ Opii,		
Liq. Plumbi Subacet.	āā. f3ij	8
Aquæ Dest.	q. s. f3vj	180

M.
Sig.—Keep applied on cotton.

In the treatment of gonorrhea:

℞[3]		or
Zinci Sulphatis	gr. xv	1 0
Plumbi Acetatis	gr. xx	1 3
Tincturæ Opii,		
Tincturæ Catechu	āā. f3ij	8 0
Aquæ	q. s. f3vj	180 0

M.
Sig.—Inject after urination. (Shake-label.)

PODOPHYLLUM.

Latin, Podophyllum. Eng., Podophyllum. Synonyms, May Apple, Mandrake. The dried rhizome and roots of *Podophyllum peltatum.*

Official Preparations.

Fluidextractum Podophylli. Eng., Fluidextract of Podophyllum.
Average Dose.—8 minims (0.5 mil).

Resina Podophylli. Eng., Resin of Podophyllum. Synonym, Podophyllin.
Form.—A yellowish powder.
Odor and Taste.—Slight odor and bitter taste.
Solubility.—Insoluble in water. Soluble in alcohol.

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[1] Stelwagon: Diseases of the Skin.
[2] White and Martin: Genito-urinary and Venereal Diseases.
[3] *Ibid.*

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Average Dose.—⅛ grain (0.01 Gm.).

The words Podophyllin and Podophyllum should not be confused, as one is many times stronger than the other. The synonym is unfortunate.

Podophyllum is sometimes known as Mandrake, but is not the Mandrake (Mandragora) of medical history.

Therapeutic Action.—Drastic purgative, said to be cholagogue.

Uses.—Podophyllum, or more commonly the resin, is used to produce purgation, particularly when there are evidences of deficient bile. As its taste, odor and action are rather unpleasant, its usefulness is questionable.

Administration.—The Resin of Podophyllum is the preparation most frequently used. It is seldom employed alone, as when given in sufficient doses it is apt to produce nausea and griping. It is often ordered in small doses with other agents to increase their purgative action.

In a purgative combination:

℞		or
Hydrarg. Chlor. Mitis	gr. ij	13
Res. Podophylli	gr. ss	03
Sodii Bicarb.	gr. x	65

M. ft. cap. no. iv.
Sig.—One every hour.

In the treatment of constipation:

℞[1]		or
Ext. Nucis Vomicæ	gr. v	32
Ext. Belladon. Fol.	gr. ij	13
Resinæ Podophylli	gr. ij	13
Ext. Cascaræ Sagr.	gr. xl	2 50

M. ft. cap. no. xx.
Sig.—One at bedtime.

As a laxative:

℞[2]		or
Ext. Belladon. Fol.	gr. j	065
Res. Podophylli	gr. j	065
Ext. Cascaræ Sagr.	gr. xx	1 300

M. ft. cap. no. x.
Sig.—One at bedtime.

[1] Ashton: Practice of Gynecology.
[2] *Ibid.*

POTASSIUM.

The metal is not official, but the Pharmacopœia contains the following official salts and preparations:

POTASSA SULPHURATA. Eng., Sulphurated Potassa. Synonym, Liver of Sulphur. A mixture composed chiefly of potassium polysulphide and potassium thiosulphate, and containing an amount of sulphides corresponding to not less than 12.8 per cent. of Sulphur.

POTASSII ACETAS (Gen., Potassii Acetatis). Eng., Potassium Acetate.

Form.—A white powder or crystalline masses.
Odor and Taste.—Odorless. A warming, saline taste.
Solubility.—In 0.5 part of water or 2.9 parts of alcohol.
Incompatibles.—Mineral acids.
Average Dose.—15 grains (1 Gm.).

Therapeutic Action.—Diuretic, refrigerant.

Uses.—It is used in the treatment of chronic nephritis, dropsy, etc.

Administration.—This salt should always be prescribed in solution.

In the treatment of chronic valvular disease:

℞[1]		or
Potassii Acetatis	ʒj	4
Infusi Digitalis	q. s. fʒij	60

M.
Sig.—Tablespoonful every three hours.

In the treatment of ascites:

℞[2]		or
Potassii Acetatis	ʒj	30
Spir. Ætheris Nit.	fʒss	15
Inf. Digitalis	q. s. fʒiv	120

M.
Sig.—Two (2) teaspoonfuls every six hours.

A frequently used combination is the pharmaceutical preparation ordered as:

℞		or
Elix. Buchu, Junip. et Pot. Acet.	fʒiv	120

Sig.—Teaspoonful in water every four hours.

[1] **Anders: Practice of Medicine.**
[2] **Hughes: Practice of Medicine.**

POTASSII BICARBONAS (Gen., Potassii Bicarbonatis). Eng., Potassium Bicarbonate.

Form.—Colorless prisms or powder.

Odor and Taste.—Odorless and a saline taste.

Solubility.—In 2.8 parts of water. Almost insoluble in alcohol.

Average Dose.—15 grains (1 Gm.).

Therapeutic Action.—Antacid, diuretic.

Uses.—Sometimes used in the treatment of rheumatism, gout, nephritis, etc.

Administration.—The following is a method of giving dry agents to form fresh ferrous carbonate in the stomach.

℞[1]	or
Ferri Sulph. Exsic.,	
Potassii Bicarb. .....āā. ʒj	4

M. ft. cap. no. xxiv.

Sig.—One after each meal.

POTASSII BITARTRAS (Gen., Potassii Bitartratis). Eng., Potassium Bitartrate. Synonym, Cream of Tartar.

Form.—A white powder.

Odor and Taste.—Odorless. Pleasant, acidulous taste.

Solubility.—In about 155 parts of water. Sparingly soluble in alcohol.

Average Dose.—30 grains (2 Gm.).

Potassium Bitartrate is contained in Compound Powder of Jalap.

Therapeutic Action.—Aperient, diuretic.

Uses.—It is a pleasant agent to produce elimination, as in hypertension, nephritis, dropsy, etc.; also is extensively employed as a mild laxative in chronic constipation.

Administration.—A pleasant method of administering is the following, for chronic constipation:

℞	or
Potassii Bitartratis ..... ʒij	60

Sig.—Teaspoonful in glass of lemonade on arising.

Or it is frequently ordered:

℞	or
Potassii Bitartratis ..... ʒj	30
Sodii Sulphatis ..... ʒij	60

M.

Sig.—Teaspoonful in glass of lemonade on arising.

This is best taken hot. Hot water is often used instead of the lemonade.

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[1] Musser and Kelly: Practical Treatment.

POTASSII BROMIDUM.—See Bromides, p. 100.

POTASSII CARBONAS. Eng., Potassium Carbonate. Synonyms, Salt of Tartar, Sal Tartar.

Form.—A white powder.

Odor and Taste.—Odorless. A strong, alkaline taste.

Solubility.—In 0.9 part of water. Insoluble in alcohol.

Incompatibles.—Acids and most salts.

Average Dose.—15 grains (1 Gm.).

Therapeutic Action.—Antacid, irritant.

Uses.—Sometimes used in the treatment of alopecia, ichthyosis, etc. Seldom prescribed.

POTASSII CHLORAS (Gen., Potassii Chloratis). Eng., Potassium Chlorate.

Form.—Colorless prisms, plates or a granular powder.

Solubility.—In 11.5 parts of water. Insoluble in alcohol.

Incompatibles.—Iron iodide, sulphuric acid, tartaric acid, etc. Should not be triturated with easily oxidizable substances, as sulphur, tannic acid, etc.

Average Dose.—4 grains (0.25 Gm.).

Trochisci Potassii Chloratis. Eng., Troches of Potassium Chlorate. Each troche contains about 2½ grains (0.15 Gm.) of the drug.

Therapeutic Action.—Classed as an astringent and as a disinfectant and stimulant to mucous membrane.

Uses.—Its employment is almost confined to the treatment of diseases of the throat and mouth, as tonsillitis, laryngitis, diphtheria, stomatitis, etc.

Administration.—The above dose is very often exceeded. Some clinicians prescribe the drug well diluted with water and with the addition of hydrochloric acid.. When the local action on the mucous membrane of the mouth and throat is particularly desired, potassium chlorate may be ordered, as:

℞

Troch. Potas. Chloratis ..... no. xx

Sig.—Use one every three hours as directed.

Or:

℞

Tab. Potas. Chloratis (5 gr.) ..... no. xx

Sig.—Use one every three hours as directed.

These are allowed to dissolve in the mouth and the saliva swallowed.

The official troches are not always stocked by the smaller drug-stores.

In the treatment of tonsillitis, pharyngitis, etc.:

℞		or	
Potassii Chloratis	.....	ʒj	4
Tinct. Ferri Chlor.	.....	fʒiij	12
Acidi Sulphurosi,			
Glycerini	.....	āā. fʒiv	15
Aquæ	..... q. s.	fʒiij	90

M.

Sig.—Two (2) teaspoonfuls in water every four hours.

In the treatment of stomatitis:

℞[1]		or	
Potassii Chloratis	.....	gr. xxiv	1.5
Syrupi Aurantii	.....	fʒj	30.0
Aquæ	..... q. s.	fʒiij	90.0

M.

Sig.—Teaspoonful in water every two hours. (For child 4 years old.)

In the treatment of stomatitis (child 3 years old):

℞[2]		or	
Potas. Chloratis	.....	gr. xxiv	1.50
Tinct. Myrrhæ	.....	♏x	.65
Syr. Acaciæ	.....	fʒij	60.00
Aquæ	..... q. s.	fʒiij	90.00

M.

Sig.—Teaspoonful in water every three hours.

POTASSII CITRAS.—See Citrates, p. 23.

Potassii Citras Effervescens.—See Citrates, p. 23.

Liquor Potassii Citratis.—See Citrates, p. 23.

POTASSII HYDROXIDUM. Eng., Potassium Hydroxide. Synonym, Caustic Potash.

Form.—White, or nearly white flakes, fused masses or pencils.

Odor and Taste.—Almost odorless. A very acrid and caustic taste.

Solubility.—In 0.9 part of water or 3 parts of alcohol.

Liquor Potassii Hydroxidi. Eng., Solution of Potassium Hydroxide. An aqueous solution containing about 5 per cent. of Potassium Hydroxide.

Average Dose.—15 minims (1 mil).

Therapeutic Action.—Caustic, antacid.

Uses.—Sometimes used for its caustic effect in the treatment of warts, callosities, ulcers, cancers, etc. Seldom prescribed.

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[1] Ruhrah: Diseases of Children.

[2] Anders: Practice of Medicine.

POTASSII HYPOPHOSPHIS.—See Hypophosphites, p. 29.

POTASSII IODIDUM.—See Iodides, p. 202.

POTASSII NITRAS. Eng., Potassium Nitrate. Synonym, Saltpetre.
Average Dose.—8 grains (0.5 Gm.).

Therapeutic Action.—Diuretic, diaphoretic.

Uses.—Seldom prescribed.

POTASSII PERMANGANAS (Gen., Potassii Permanganatis). Eng., Potassium Permanganate.

Form.—Purple-colored prisms.

Odor and Taste.—Odorless. Taste at first sweet, but afterwards disagreeable and astringent.

Solubility.—In 13.5 parts of water. Decomposed by alcohol.

Incompatibles.—Organic matter, mineral acids, ammonia, arsenites, bromides, chlorides, hypophosphites, hyposulphites, sulphites, ferrous salts, hydrogen dioxide, mercurous salts, etc.

Average Dose.—1 grain (0.06 Gm.).

Therapeutic Action.—Germicide, disinfectant, deodorant.

Uses.—Sometimes used for disinfecting the hands for operations. Extensively employed as a wet dressing for infected wounds, erysipelas, etc. Used by irrigation for gonorrhea, cystitis, vaginitis, pelvic congestion, etc. A remedy for snake-bite. Used as a deodorant for cast-off dressing, sinks, etc.

Administration.—The action of this drug depends on its splitting up in the presence of organic matter with the liberation of oxygen, which oxidizes the organic material. It is therefore a true chemical antidote for alkaloidal poisoning. It should be prescribed in distilled water, as the small amount of organic matter in ordinary water will decompose the drug to that extent. When triturated with glycerin or other easily oxidized matter, a dangerous explosion may occur. As an irrigation for gonorrhea, cystitis, etc., it is usually employed in aqueous solution about 1 : 20,000 to 1 : 3000 strength. As a vaginal douche or wet dressing the strength is commonly about 1 : 5000. It should be remembered that it will stain clothing or the skin. The stains may be removed by solution of oxalic acid. The following illustrates the method of prescribing:

As a vaginal douche:

℞		or
Potas. Permanganatis	gr. cl	10|0
Aquæ Destillatæ	q. s. f℥vj	180|0

M.

Sig.—Use tablespoonful to gallon of hot water as directed.

This makes a solution of about 1 : 5000.

As a wet dressing for carbuncles, etc.:

℞ or

Potassii Permangan.	gr. ʟ	3
Aquæ Dest.	q. s. f℥ij	60

M.

Sig.—Use a teaspoonful to a quart of hot water as directed.
This makes a solution of about 1 to 5000.

POTASSII ET SODII TARTRAS (Gen., Potassii et Sodii Tartratis). Eng., Potassium and Sodium Tartrate. Synonym, Rochelle Salt.

Form.—White powder.

Odor and Taste.—Odorless. A cooling saline taste.

Solubility.—In 0.9 part of water. Insoluble in alcohol.

Average Dose.—2½ drachms (10 Gm.).

Pulvis Effervescens Compositus. Eng., Compound Effervescing Powder, Seidlitz Powder. These are prepared in sets of one blue and one white paper. Each blue paper contains Potassium and Sodium Tartrate, 7.5 Gm. (120 grains); Sodium Bicarbonate, 2.5 Gm. (40 grains). Each white paper contains Tartaric Acid, 2.15 Gm. (35 grains).

Average Dose.—1 set of two powders.

Therapeutic Action.—Purgative (saline and hydragogue).

Uses.—Potassium and sodium tartrate, usually in the form of Seidlitz powder, is a popular and pleasant purgative.

Administration.—Care should be exercised in ordering (particularly by phone) potassium and sodium tartrate, to prevent confusion with antimony and potassium tartrate (tartar emetic). Rochelle Salt is most frequently employed in the form of Seidlitz powders, which constitute one of the most agreeable saline purgatives. The two powders of a Seidlitz powder are dissolved in separate glasses about a fourth full of water; then the contents of the glasses are mixed and swallowed while still effervescing. It is best taken before breakfast.

LIQUOR POTASSII ARSENITIS.—See Arsenum, p. 75.

PRUNUS VIRGINIANA.

Latin, Prunus Virginiana. Eng., Wild Cherry. The bark of *Prunus serotina.*

Principal Constituents.—Amygdalin (which yields with water, hydrocyanic acid, etc.), tannic acid.

Average Dose.—30 grains (2 Gm.).

Official Preparation.

Syrupus Pruni Virginianæ. Eng., Syrup of Wild Cherry. Represents 15 per cent. of the drug.

Average Dose.—1 fluidrachm (4 mils).

Therapeutic Action.—Bitter tonic and sedative.

Uses.—Frequently used in cough preparations and in tonics.

Administration.—The syrup is the preparation most frequently used. It is seldom prescribed alone, but is used as a vehicle, particularly for tonic and expectorant preparations.

℞		or	
Diacetylmorph. Hydrochlor.	gr. j		065
Ammonii Chlor.	3ij	8	000
Syr. Ipecacuanhæ	f3j	4	000
Syr. Pruni Virg.	q. s. f3iij	90	000

M.

Sig.—Teaspoonful every two hours.

Pulvis Aromaticus.—See Cinnamomum.

Pulvis Cretæ Compositus.—See Calcium.

Pulvis Effervescens Compositus.—See Potassii et Sodii Tartras.

Pulvis Glycyrrhizæ Compositus.—See Glycyrrhiza.

Pulvis Ipecacuanhæ et Opii.—See Opium.

Pulvis Jalapæ Compositus.—See Jalapa.

Pulvis Rhei Compositus.—See Rheum.

PYRETHRUM.

Latin, Pyrethrum. Eng., Pyrethrum. Synonym, Pellitory. The dried root of *Anacyclus Pyrethrum*.

Average Dose.—30 grains (2 Gm.).

Official Preparation.

Tinctura Pyrethri. Eng., Tincture of Pyrethrum. Represents 20 per cent. of the drug.

Therapeutic Action.—Rubefacient, sternutatory, sialagogue.

Uses.—Recommended principally for scurvy, and for relaxed and other conditions of the mouth and throat. Seldom prescribed.

PYROGALLOL.

Latin, Pyrogallol. Eng., Pyrogallol. Synonyms, Pyrogallic Acid, Pyro. White or nearly white laminæ, or fine needles; odorless, bitter taste, freely soluble.

Not often prescribed, but under the name of "Pyro" is extensively used in photography.

PYROXYLINUM.

Latin, Pyroxylinum. Eng., Pyroxylin. Synonym, Soluble Gun Cotton.

QUASSIA.

Latin, Quassia. Eng., Quassia. The wood of *Picrasma excelsa*, or of *Picrasma amara*.

Average Dose.—8 grains (0.5 Gm.).

Official Preparation.

Tinctura Quassiæ. Eng., Tincture of Quassia. Represents 20 per cent. of the drug.

Average Dose.—30 minims (2 mils).

Therapeutic Action.—Stomachic, bitter tonic.

Uses.—Sometimes used for loss of appetite, dyspepsia, etc. By enema it is used for pinworms. It is a vegetable bitter that can be prescribed with iron. The solution turns dark, but does not give a precipitate.

Administration.—The following illustrates one of the most frequent uses of the drug.

As an enema in the treatment of pinworms:

℞		or
Quininæ Bisulph.	ʒj	4
Tinct. Quassiæ	fʒij	60

M.

Sig.—Use two (2) tablespoonfuls to quart of warm water as directed.

Or:

℞		or
Quininæ Bisulph.	ʒss	2
Quassiæ	℥j	30

M.

Sig.—Make a tea and use as directed.

Patient is instructed to add one or two quarts of boiling water and let stand until cool enough to use, then strain.

These enemas are usually preceded by an active purgative and repeated in a few days.

QUININA.

See Cinchona, p. 130.

QUININÆ BISULPHAS.

See Cinchona, p. 130.

QUININÆ DIHYDROCHLORIDUM.

See Cinchona, p. 130.

QUININÆ ET UREÆ HYDROCHLORIDUM.

See Cinchona, p. 130.

QUININÆ HYDROBROMIDUM.

See Cinchona, p. 130.

QUININÆ HYDROCHLORIDUM.

See Cinchona, p. 130.

QUININÆ SALICYLAS.

See Cinchona, p. 130.

QUININÆ SULPHAS.

See Cinchona, p. 130.

QUININÆ TANNAS.

See Cinchona, p. 130.

Resina.—See Terebinthina.

Resina Jalapæ.—See Jalapa.

Resina Podophylli.—See Podophyllum.

Resina Scammoniæ.—See Scammoniæ Radix.

RESORCINOL.

Latin, Resorcinol (Gen., Resorcinolis). Eng., Resorcinol. Synonym, Resorcin.

A diatomic phenol.

Form.—Colorless, needle-shaped crystals or a powder acquiring a pinkish tint on exposure to air and light.

Odor and Taste.—A peculiar odor and a sweetish and afterward bitter taste.

Solubility.—In 0.9 part of water or alcohol.

Incompatibles.—Acetanilide, alkalies, antipyrine, camphor, ferric chloride, menthol, spirit of nitrous ether, urethane, etc.

Average Dose.—2 grains (0.125 Gm.).

Therapeutic Action.—Germicide.

Uses.—Sometimes given internally, as for intestinal fermentation, gastritis, etc.; but its use is principally confined to the treatment of skin diseases, as alopecia, tinea, scabies, etc.

Administration.—*Internally.*—Resorcin, if administered by mouth, is best given in solution well diluted.

Externally.—It is used both in solution and in ointments. It is most commonly combined with other agents.

In the treatment of alopecia:

℞[1]		or	
Resorcinolis	gr. lxxx	5	0
Quininæ	gr. xv	1	0
Olei Ricini	♏xx	1	3
Alcoholis	q. s. f℥iv	120	0

M.

Sig.—Apply as directed.

In the treatment of alopecia:

℞[2]		or	
Resorcinolis	gr. lxxx	5	0
Phenolis	gr. xx	1	3
Spir. Myrciæ	q. s. f℥iv	120	0

M.

Sig.—Apply as directed.

In the treatment of seborrhœa capitis:

℞[3]		or	
Resorcinolis	℥j	4	
Olei Ricini	f℥j	4	
Alcoholis	f℥iv	120	0

M.

Sig.—Apply as directed.

In the treatment of ecthyma:

℞[4]		or	
Resorcinolis	℥j	4	
Acidi Borici	℥ij	8	
Glycerini	f℥j	4	
Alcoholis	f℥iv	15	
Aquæ	q. s. f℥viij	240	

M.

Sig.—Apply freely.

[1] Stelwagon: Diseases of the Skin.
[2] *Ibid.*
[3] *Ibid.*
[4] *Ibid.*

In the treatment of scabies:

℞		or
Resorcinolis	gr. xv	1
Ung. Sulphuris	ʒij	8
Petrolati	q. s. fʒj	30

M.
Sig.—Apply as directed.

RHEUM.

Latin, Rheum (Gen., Rhei). Eng., Rhubarb. The rhizome and roots of *Rheum officinale, R. palmatum,* etc.

Principal Constituents.—Chrysophan, rheotannic acid, etc.

Average Dose.—15 grains (1 Gm.).

Official Preparations.

Extractum Rhei. Eng., Extract of Rhubarb. A powder.
Average Dose.—4 grains (0.25 Gm.).

Fluidextractum Rhei. Eng., Fluidextract of Rhubarb.
Average Dose.—15 minims (1 mil).

Pilulæ Rhei Compositæ. Eng., Compound Pills of Rhubarb. Each Pill contains 0.13 Gm. (2 grains) of Rhubarb with Aloes, Myrrh and Peppermint.
Average Dose.—2 pills.

Pulvis Rhei Compositus. Eng., Compound Powder of Rhubarb. Rhubarb, 25 Gm.; Magnesium Oxide, 65 Gm.; Ginger, 10 Gm.
Average Dose.—30 grains (2 Gm.).

Syrupus Rhei. Eng., Syrup of Rhubarb. Represents 10 per cent. of the drug with Potassium Carbonate and Cinnamon.
Average Dose.—2½ fluidrachms (10 mils).

Syrupus Rhei Aromaticus. Eng., Aromatic Syrup of Rhubarb. Represents 3 per cent. of the drug with aromatics.
Average Dose.—2½ fluidrachms (10 mils).

Tinctura Rhei. Eng., Tincture of Rhubarb. Represents 20 per cent. of the drug.
Average Dose.—1 fluidrachm (4 mils).

Tinctura Rhei Aromatica. Eng., Aromatic Tincture of Rhubarb. Represents 20 per cent. of the drug with aromatics.
Average Dose.—30 minims (2 mils).

Therapeutic Action.—Purgative, stomachic, also astringent.

Uses.—Rhubarb is still a popular purgative with the laity. It is sometimes prescribed by the profession, but usually as an adjuvant for other agents. Its secondary effect is astringent.

Administration.—Powdered Rhubarb is sometimes used with other purgative agents, and the other preparations are occasionally employed. The taste is disagreeable.

In combination with other purgatives:

℞		or
Hydrarg. Chlor. Mitis.,		
Rhei Pulv.,		
Ext. Fel. Bovis	āā. gr. v	320
Ext. Hyoscyami	gr. j	065

M. ft. cap. no. iij.
Sig.—One every hour.

ROSA GALLICA.

Latin, Rosa Gallica. Eng., Red Rose. The dried petals of *Rosa gallica.*

Principal Constituents.—Volatile oil, etc.

Official Preparations.

Fluidextractum Rosæ. Eng., Fluidextract of Rose.
Average Dose.—30 minims (2 mils).

Mel Rosæ. Eng., Honey of Rose. Fluidextract of Rose, 120 mils; Clarified Honey, to make 1000 Gm.
Average Dose.—1 fluidrachm (4 mils).

Aqua Rosæ. Eng., Rose Water. Stronger Rose Water and Distilled Water equal parts.

Aqua Rosæ Fortior. Eng., Stronger Rose Water. Water saturated with the volatile Oil of Rose petals by distillation.

Unguentum Aquæ Rosæ. Eng., Ointment of Rose Water. Synonym, Cold Cream. Spermaceti, 125 Gm.; White Wax, 120 Gm.; Expressed Oil of Almond, 560 Gm.; Stronger Rose Water, 190 mils; Sodium Borate, 5 Gm.

Unofficial Constituent.

Oleum Rosæ. Eng., Oil of Rose. Synonym, Attar of Rose. A volatile oil.

Therapeutic Action.—Rose is a mild astringent and stomachic.

Uses.—The preparations are extensively employed as vehicles and flavors.

Administration.—These preparations are used almost exclusively as vehicles, and to disguise unpleasant tastes and odors. The Honey and Syrup are not used in some neighborhoods with enough frequency to enable the smaller drug-stores to keep a fresh supply on hand. Rose Water and the Ointment of Rose Water are

very desirable vehicles, and can usually be supplied in good condition by any pharmacy.

As a vehicle in a prescription for the treatment of chapped face and hands:

℞		or	
Phenolis Liq.	♏ x		65
Glycerini	f℥j	30	00
Alcoholis	f℥j	30	00
Aquæ Rosæ	q. s. f℥iv	120	00

M.
Sig.—Apply after bathing.

As a flavor in a prescription for the treatment of salivation:

℞[1]		or	
Acidi Borici,			
Acidi Tannici	āā. gr. xl	2	5
Mellis Rosæ	f℥ij	60	0
Aquæ	q. s. f℥vj	180	0

M.
Sig.—Use as a mouth-wash every two hours.

As a vehicle in a prescription for the treatment of eczema of the scrotum:

℞[2]		or	
Camphoræ,			
Chlorali Hydrati	āā gr. xx	1	3
Adipis Lanæ Hyd.	℥ss	15	0
Ung. Aquæ Rosæ	q. s. ℥j	30	0

M.
Sig.—Apply liberally several times a day.

As a vehicle in a prescription for the treatment of eczema of the feet and legs:

℞[3]		or	
Phenolis	gr. x		65
Olei Cadini	♏ x		65
Picis Liquidæ	gr. xx	1	30
Ung. Aquæ Rosæ	q. s. ℥j	30	00

M.
Sig.—Apply thoroughly twice a day.

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[1] White and Martin: Genito-urinary and Venereal Diseases.
[2] Ohmann-Dumesnil: Diseases of the Skin.
[3] *Ibid.*

SABAL.

Latin, Sabal. Eng., Sabal. Synonym, Saw Palmetto. The partially dried ripe fruit of *Serenoa serrulata.*

Average Dose.—15 grains (1 Gm.).

Official Preparation.

Fluidextractum Sabal. Eng., Fluidextract of Sabal.
Average Dose.—15 minims (1 mil).

Therapeutic Action.—Diuretic, expectorant.

Uses.—Sabal is a constituent of some of the popular pharmaceutical preparations for genito-urinary diseases, as cystitis, urethritis, etc. It is also recommended for chronic bronchitis, asthma, etc.

Administration.—The most frequently used preparation is the Elixir of Saw Palmetto and Santal Co., which is prescribed alone.

SACCHARUM.

Latin, Saccharum (Gen., Sacchari). Eng., Sugar. Synonyms, Cane Sugar, Granulated Sugar, Sucrose.

Form.—White, dry, hard, distinctly crystalline granules or crystalline powder.

Odor and Taste.—Odorless. A purely sweet taste.

Solubility.—In 0.5 part of water or 170 parts of alcohol.

Official Preparations.

Syrupus. Eng., Syrup. Synonym, Simple Syrup. Sugar, 850 Gm.; Distilled Water, to make 1000 mils.

Sugar is a constituent of all syrups and many other officinal preparations. Sugar as such is often prescribed to give bulk and sweet taste to powders and in solution to disguise unpleasant tastes and also to render liquids thicker so that soluble matter will remain longer in suspension when the mixture is agitated. The flavored syrups, as Syrup of Orange, etc., are more frequently employed.

SACCHARUM LACTIS.

Latin, Saccharum Lactis (Gen., Sacchari Lactis). Eng., Sugar of Milk. Synonym, Lactose. Obtained from the whey of cow's milk.

Form.—Usually a white powder.

Odor and Taste.—Odorless. A faintly sweet taste.

Solubility.—In 4.9 parts of water. Insoluble in alcohol.

Sugar of milk is used in Powder of Ipecac and Opium and Trituration of Elaterin. It is therapeutically inactive, only faintly sweet as compared with cane sugar, and being a clean white powder it makes a very desirable vehicle in administering powders. It is a valuable constituent in the modified milk formulæ.

The followjng will show how it is ordered in prescribing:

As a vehicle:

℞		or
Hydrarg. Chlor. Mitis	gr. j	0|65
Sacchari Lactis	gr. xxx	2|00

M. ft. cht. no. v.
Sig.—One every half-hour.

SALICINUM.

Latin, Salicinum. Eng., Salicin. A glucoside obtained from several species of *Salix* and *Populus* and appearing in the form of crystals, needles, prisms, or powder; odorless, and having a very bitter taste.

Average Dose.—15 grains (1 Gm.).

Therapeutic Action.—Antipyretic, antirheumatic, antiseptic.

Uses.—Sometimes employed in the treatment of rheumatism, tonsillitis and kindred conditions. Not often prescribed.

SANGUINARIA.

Latin, Sanguinaria. Eng., Sanguinaria. Synonym, Bloodroot. The dried rhizome and roots of *Sanguinaria canadensis.*

Average Dose.—2 grains (0.125 Gm.).

Official Preparation.

Tinctura Sanguinariæ. Eng., Tincture of Sanguinaria. Represents 10 per cent. of the drug.

Average Dose.—15 minims (1 mil).

Therapeutic Action.—Expectorant, emetic, etc.

Uses.—Sanguinaria is a constituent of some pharmaceutical preparations for cough, etc. It has been recommended for other conditions. It is seldom a prescription ingredient.

SANTALUM RUBRUM.

Latin, Santalum Rubrum. Eng., Red Saunders. The heart-wood of *Pterocarpus santalinus.*

Therapeutic Action.—Probably none.

Uses.—As a coloring agent for pharmaceutical preparations.

SANTONINUM.

Latin, Santoninum (Gen., Santonini). Eng., Santonin. The inner anhydride or lactone of Santonic Acid obtained from Santonica (*Artemisia pauciflora*).

Form.—Colorless prisms, turning yellow on exposure to light.

Odor and Taste.—Odorless and nearly tasteless when first put in the mouth, but afterward developing a bitter taste.

Solubility.—In about 5300 parts of water or 43 parts of alcohol.

Average Dose.—1 grain (0.06 Gm.).

Therapeutic Action.—Vermifuge.

Uses.—Santonin is used for the removal of roundworms and sometimes, in connection with other measures, for the removal of pinworms.

Administration.—It should be remembered that Santonin is a dangerous remedy, sometimes, even in the usual medicinal doses, causing toxic symptoms. Another matter of importance is to advise the family of patient as to the possibility of it causing a yellow- or red- colored urine.

Santonin is prescribed either with some inert substance, as sugar, or with a purgative, particularly the mild mercurous chloride. Its virtue depends largely on its comparative insolubility, which enables it to reach the lower part of the intestinal tract. It is considered desirable, therefore, by many, to administer crystals in preference to powder. In the case of adults this is readily accomplished by prescribing the crystals, with other agents, in capsules. For children, small crystals may be used with granulated sugar or sugar of milk. The crystals may also be incorporated with confection of rose, or made into lozenges with sugar and tragacanth.

In the treatment of roundworms (for child 4 years old):

℞		or
Santonini (cryst.)	gr. j	.06
Hydrarg. Chlor. Mitis	gr. ij	.13
Sacchari Lactis	gr. xxx	2.00

M. (non trit.) ft. cht. no. iv.

Sig.—One every hour.

This is probably best given in the early morning and followed in a few hours by an active purgative. The advantage is an empty stomach and upper intestine, and the patient being under better observation (for toxic symptoms).

The common practice of people purchasing and administering the ready-prepared worm candy and syrups should be unqualifiedly discouraged.

SAPO.

Latin, Sapo. Eng., Soap. Synonym, White Castile Soap, Hard Soap.

Soap prepared from olive oil and sodium hydroxide.

Preparations.

Linimentum Saponis. Eng., Soap Liniment. Synonym, Liquid Opodeldoc. Soap, 60 Gm.; Camphor, 45 Gm.; Oil of Rosemary, 10 Gm.; Alcohol, 700 mils; Water, to 1000 mils. Soap Liniment is contained in Chloroform Liniment.

Therapeutic Action.—Detergent, and the liniment is a rubefacient and cutaneous stimulant.

Uses.—Soap is used externally as a cleansing agent, and by suppository or enema to empty the bowels. Soap liniment is used as a mild rubefacient and lubricant for massage, and as a vehicle for more active agents.

Administration.—Soap Liniment is rather extensively used externally either alone or with other agents, as chloroform or menthol and chloroform in various proportions. See Chloroformum.

In the treatment of neuralgia (to be applied with friction along the course of the affected nerve):

℞[1]		or
Tinct. Aconiti,		
Chloroformi	āā. f℥iv	15
Lin. Saponis	q. s. f℥iv	120
M.		
Sig.—Apply as directed. (Poison-label.)		

SAPO MOLLIS.

Latin, Sapo Mollis. Eng., Soft Soap. Synonym, Green Soap. Soap prepared from potassium hydroxide and cottonseed oil.

Form.—A soft, unctuous, yellowish-brown mass.

[1] Shoemaker: Materia Medica and Therapeutics.

Odor and Taste.—Characteristic odor and alkaline taste.
Solubility.—In hot water to nearly a clear liquid.

Official Preparations.

Linimentum Saponis Mollis. Eng., Liniment of Soft Soap. Synonym, Tincture of Green Soap. Soft Soap, 650 Gm.; Oil of Lavender Flowers, 20 mils; Alcohol, to 1000 mils.

Therapeutic Action.—Detergent. Stimulant to the skin.

Uses.—The liniment of soft soap is used alone or with other agents as a shampoo in the treatment of diseases of the scalp, and various other skin affections. It is extensively used in place of hard soap for cleansing the skin for surgical procedures.

Administration.—Liniment of Soft Soap is extensively used and recommended by the profession, but does not often constitute part of a prescription except in dermatological work. Soft Soap is often used in ointments with other agents.

Used in an antiparasitic ointment:

℞[1]		or
Sulphuris Præcip.	ʒij	8
Saponis Mollis, Olei Cadini	āā. ʒj	4
Adipis Benzoinati	q. s. ʒj	30

M.
Sig.—Apply as directed.

SARSAPARILLA.

Latin, Sarsaparilla. Eng., Sarsaparilla. The dried root of several species of *Smilax.*
Average Dose.—30 grains (2 Gm.).

Official Preparations.

Fluidextractum Sarsaparillæ. Eng., Fluidextract of Sarsaparilla.
Average Dose.—30 minims (2 mils).

Fluidextractum Sarsaparillæ Compositum. Eng., Compound Fluidextract of Sarsaparilla. Sarsaparilla, 750 Gm.; Glycyrrhiza, 120 Gm.; Sassafras, 100 Gm.; Mezereum, 30 Gm.; Glycerin, Alcohol and Water, to 1000 mils.
Average Dose.—30 minims (2 mils).

Syrupus Sarsaparillæ Compositum. Eng., Compound Syrup of Sarsaparilla. Fluidextract of Sarsaparilla, 200 mils; Fluidextract of Glycyr-

[1] Stelwagon: Diseases of the Skin.

rhiza, 15 mils; Fluidextract of Senna, 15 mils; with Oils of Sassafras, Anise and Gaultheria; Sugar and Water.

Average Dose.—4 fluidrachms (15 mils).

Therapeutic Action.—Has been classed as an alterative, but any virtue is questionable.

Uses.—The preparations of sarsaparilla are used as vehicles, particularly for alterative agents. It is a constituent of many pharmaceutical and proprietary remedies.

Administration.—Sarsaparilla and its preparations are not now very extensively prescribed. The Compound Syrup is sometimes used as a vehicle in the administration of "Mixed Treatment." The taste of Sarsaparilla is regarded as very pleasant by some and decidedly disagreeable by others. It is an ingredient in the unofficial Compound Elixir of Salicylic Acid, a rather popular remedy for rheumatism.

In the treatment of syphilis:

℞[1]		or	
Hydrarg. Iodidi Rub.	gr. iv		26
Potassii Iodidi	ʒiv	4	00
Syr. Sarsaparil. Co.	q. s. fʒvj	180	00

M.

Sig.—Teaspoonful in water four times daily.

SASSAFRAS.

Latin, Sassafras. Eng., Sassafras. The dried bark of the root of *Sassafras varifolium.*

Average Dose.—2½ drachms (10 Gm.).

Official Constituents.

Oleum Sassafras. Eng., Oil of Sassafras. A volatile oil.

Average Dose.—3 minims (0.2 mil).

Sassafras and the oil are contained in some other official preparations.

Therapeutic Action.—Stomachic. The oil is also an irritant.

Uses.—The oil is a favorite constituent of household liniments, and sassafras is used in the preparation of some pharmaceutical and proprietary remedies. Seldom prescribed.

SCAMMONIÆ RADIX.

Latin, Scammoniæ Radix. Eng., Scammony Root. The dried root of *Convolvulus Scammonia.*

Average Dose.—4 grains (0.250 Gm.).

[1] White and Martin: Genito-urinary and Venereal Diseases.

Official Preparation.

Resina Scammoniæ. Eng., Resin of Scammony.
Average Dose.—3 grains (0.25 Gm.).

Resin of Scammony is contained in Compound Extract of Colocynth.

Therapeutic Action.—Hydragogue purgative.
Uses.—Seldom prescribed.

SCILLA.

Latin, Scilla. Eng., Squill. The bulb of *Urginea maritima.*
Average Dose.—1½ grains (0.1 Gm.).

Official Preparations.

Acetum Scillæ. Eng., Vinegar of Squill. Represents 10 per cent. of the drug.
Average Dose.—15 minims (1 mil).

Fluidextractum Scillæ. Eng., Fluidextract of Squill.
Average Dose.—1½ minims (0.1 mil).

Syrupus Scillæ. Eng., Syrup of Squill. Represents 4.5 per cent. of the drug. Contains some Acetic Acid.
Average Dose.—30 minims (2 mils).

Syrupus Scillæ Compositus. Eng., Compound Syrup of Squill. Synonym, Hive Syrup. Represents Squill 8 per cent., Senega 8 per cent., Antimony and Potassium Tartrate 0.2 per cent.
Average Dose.—30 minims (2 mils).

Tinctura Scillæ. Eng., Tincture of Squill. Represents 10 per cent. of the drug.
Average Dose.—15 minims (1 mil).

Therapeutic Action.—Expectorant, diuretic, emetic.

Uses.—Employed in the treatment of bronchitis, pneumonia, asthma, cardiac diseases, dropsy, etc. Not often prescribed.

Administration.—When employed as a diuretic, Powdered Squill is the form of common choice. (See Digitalis.) It is usually combined with other agents and administered in pills or capsules. As an expectorant the syrup is sometimes prescribed. It is usually associated with other agents.

Squill and its preparation are not often used by the profession.

SCOPOLAMINÆ HYDROBROMIDUM.

Latin, Scopolaminæ Hydrobromidum (Gen., Scopolaminæ Hydrobromidi). Eng., Scopolamine Hydrobromide. Synonym, Hyoscine Hydrobromide.

Form.—Colorless crystals.

Odor.—Odorless.

Solubility.—In 1.5 parts of water or 20 parts of alcohol.

Average Dose.—1/200 grain (0.0003 Gm.).

Therapeutic Action.—Mydriatic, anodyne, hypnotic, antispasmodic, delirifacient.

Uses.—Sometimes used for dilating the pupil; also for such conditions as alcoholic psychosis, dementia, etc.

Administration.—Used by the physician, but is not often a prescription ingredient. It is a dangerous drug even when used with every caution.

SENEGA.

Latin, Senega. Eng., Senega. Synonym, Senega Snakeroot. The dried roots of *Polygala Senega.*

Average Dose.—15 grains (1 Gm.).

Official Preparations.

Fluidextractum Senegæ. Eng., Fluidextract of Senega.
Average Dose.—15 minims (1 mil).

Syrupus Senegæ. Eng., Syrup of Senega. Represents 20 per cent. of the drug.
Average Dose.—1 fluidrachm (4 mils).

Senega is contained in the Compound Syrup of Squill.

Therapeutic Action.—Expectorant, diuretic.

Uses.—Sometimes used in the treatment of bronchitis. Seldom prescribed.

SENNA.

Latin, Senna. Eng., Senna. The dried leaflets of *Cassia acutifolia* or of *C. angustifolia.*

Average Dose.—1 drachm (4 Gm.).

Official Preparations.

Fluidextractum Sennæ. Eng., Fluidextract of Senna.
Average Dose.—30 minims (2 mils).

Infusum Sennæ Compositum. Eng., Compound Infusion of Senna. Synonym, Black Draught. Represents 6 per cent. of Senna with Manna, Fennel and Magnesium Sulphate.
Average Dose.—4 fluidounces (120 mils).

Syrupus Sennæ. Eng., Syrup of Senna. Represents 25 per cent. of the drug.
Average Dose.—1 fluidrachm (4 mils).

Senna is also contained in Compound Syrup of Sarsaparilla and Compound Powder of Glycyrrhiza.

Therapeutic Action.—Purgative.

Uses.—Senna is a popular remedy of the laity and is a constituent of many of the proprietary laxatives and "Liver Medicines." Not often prescribed.

SERPENTARIA.

Latin, Serpentaria. Eng., Serpentaria. Synonyms, Virginia Snakeroot, Texas Snakeroot. The dried rhizome and roots of *Aristolochia serpentaria* or of *A. reticulata.*

Average Dose.—15 grains (1 Gm.).

Serpentaria is also contained in the Compound Tincture of Cinchona.

Therapeutic Action.—Classed as a bitter tonic, expectorant, diuretic.

Uses.—It is sometimes used as an adjuvant and corrective for other agents in the treatment of anorexia, indigestion, etc., and in the treatment of bronchitis and related conditions. Seldom prescribed.

SERUM ANTIDIPHTHERICUM.

Latin, Serum Antidiphthericum. Eng., Antidiphtheric Serum, Diphtheria Antitoxin. A fluid having a potency of not less than 250 antitoxic units per mil, separated from the coagulated blood of the horse, *Equus Caballus,* or other large domestic animal, which has been properly immunized against diphtheria toxin.

Average Dose.—Hypodermic, 10,000 units; protective, 1000 units.

SERUM ANTIDIPHTHERICUM PURIFICATUM.

Latin, Serum Antidiphthericum Purificatum. Eng., Purified Antidiphtheric Serum. Synonyms, Antidiphtheric Globulins, Concentrated Diphtheria Antitoxin, etc. A solution in physiological solution of sodium chloride of certain antitoxic substances obtained from the blood-serum or plasma of the horse, *Equus Caballus,* or other large domestic animal, which has been properly immunized against diphtheria toxin.

Average Dose.—Hypodermic, 10,000 units; protective, 1000 units.

Very large doses are sometimes given, particularly in laryngeal infection. The dose should be based on the probable amount of blood in the patient (size of patient).

The serum is best injected into the loose connective tissue under the skin, care being taken not to inject into the skin. Probably the most desirable site is over the lower ribs in about the anterior axillary line, or a little to the front of this. The patient is then able to lie on the back or either side.

The area should be cleaned, the site of injection touched with tincture of iodine, the skin lifted with the thumb and index finger of the operator's left hand, and the needle inserted with a firm, rapid motion. The pain is less if the liquid is injected slowly. The puncture may be covered with a strip of sterile adhesive plaster for a few hours.

Serum Sickness.—Considerable pain at the site of injection is often experienced for a few hours. Sometimes, particularly when the patient has recently been given a serum, toxic symptoms may develop. Acute anaphylaxis is rare, but an elevation of temperature and general discomfort occur often. The most common manifestation is edema and urticaria, developing between the fifth and eighth days after the injection. Sodium bicarbonate, internally and externally, has been extensively used. A hypodermic of 10 to 15 minims (for an adult) of Solution of Adrenalin Chloride (1 to 1000) seems to give excellent results.

SERUM ANTITETANICUM.

Latin, Serum Antitetanicum. Eng., Antitetanic Serum. Synonyms, Tetanus Antitoxin, Lockjaw Antitoxin. A fluid having a potency of not less than 100 units per mil, separated from the coagulated blood of the horse, *Equus Caballus*, or other large domestic animal which has been properly immunized against tetanus toxin.

Average Dose.—Hypodermic, 10,000 units; protective, 1500 units.

SERUM ANTITETANICUM PURIFICATUM.

Eng., Purified Antitetanic Serum. Synonyms, Antitetanic Globulins, Concentrated Tetanus Antitoxin, etc. A solution in physiological solution of sodium chloride, of certain antitoxic substances obtained from the blood-serum or plasma of the horse, *Equus*

Caballus, or other large domestic animal which has been properly immunized against tetanus toxin.

Average Dose.—Hypodermic, 10,000 units; protective, 1500 units.

SERUM ANTITETANICUM SICCUM.

Eng., Dried Antitetanic Serum. Synonyms, Dried Tetanus Antitoxin, etc. Obtained by the evaporation of either of the two other antitetanic serums.

Average Dose.—Hypodermic, 10,000 units; protective, 1500 units.

The curative value of Antitetanic Serum is seriously questioned, but its protective value is beyond dispute. It is the custom to give 1500 units as the protective dose for patients of almost any size or age.

The sooner the injection is made after injury the better the protection seems to be. For site of injection, serum sickness and its treatment, see Serum Antidiphthericum.

SEVUM PRÆPARATUM.

Latin, Sevum Præparatum. Eng., Prepared Suet. Synonym, Mutton Suet. The purified internal fat of the abdomen of the sheep, *Ovis aries.*

Therapeutic Action.—Emollient.

Uses.—Employed in pharmaceutical manufacturing, but seldom prescribed.

SINAPIS ALBA.

Latin, Sinapis Alba. Eng., White Mustard. Synonym, Yellow Mustard. The seed of *Sinapis alba.*

Average Dose.—Emetic, 2½ drachms (10 Gm.).

Therapeutic Action.—Emetic, rubefacient, vesicant.

Uses.—Extensively used in the form of poultices, plasters, etc., in the treatment of pleurisy, bronchitis, pneumonia, and as a counterirritant for deep-seated pain generally. In the powdered form it is a prompt and safe emetic.

Administration.—As an emetic a tablespoonful of powdered mustard is given in a glass of warm water. As a counterirritant, a satisfactory formula is one heaping tablespoonful of powdered mustard to eight of flour and the white of one egg and hot water.

It is applied hot and allowed to remain until the desired redness has been induced.

SINAPIS NIGRA.

Latin, Sinapis Nigra. Eng., Black Mustard. Synonym, Brown Mustard. The seed of *Brassica nigra*.

Average Dose.—Emetic, 2½ drachms (10 Gm.).

Official Preparations and Constituents.

Emplastrum Sinapis. Eng., Mustard Plaster. Synonyms, Charta Sinapis, Mustard Paper (U. S. P., viii). A uniform mixture of powdered black mustard (deprived of its fixed oil) and a solution of rubber, spread on paper, cotton cloth, or other fabric.

Oleum Sinapis Volatile. Eng., Volatile Oil of Mustard. Synonym, Essential Oil of Mustard.

Average Dose.—⅛ minim (0.008 mil).

Therapeutic Action.—Emetic, rubefacient, vesicant.

Uses.—See Sinapis Alba. The oil is a constituent of many proprietary liniments. It is a powerful irritant.

SODIUM.

The metal is not official, but the Pharmacopœia contains the following salts and preparations:

SODII ACETAS. Eng., Sodium Acetate. Formula, $NaC_2N_3O_2 + 3H_2O$.

Form.—Colorless prisms or powder.

Odor and Taste.—Odorless. A cooling saline taste.

Solubility.—In about 0.8 part of water or 19 parts of alcohol.

Average Dose.—15 grains (1 Gm.).

Therapeutic Action.—Diuretic, diaphoretic.

Uses.—Seldom prescribed.

SODII ARSENAS.—See Arsenum, p. 75.

Sodii Arsenas Exsiccatus.—See Arsenum, p. 75.

Liquor Sodii Arsenatis.—See Arsenum, p. 75.

SODII BENZOAS.—See Benzoates, p. 92.

SODII BENZOSULPHINIDUM. Eng., Sodium Benzosulphinide. Synonyms, Sodium-Saccharin, Soluble Saccharin.

Average Dose.—3 grains (0.2 Gm.).

SODII BICARBONAS (Gen., Sodii Bicarbonatis). Eng., Sodium Bicarbonate. Synonyms, Soda, Cooking Soda. Formula $NaHCO_3$.

Form.—A white powder.

Odor and Taste.—Odorless. A cooling saline taste.

Solubility.—In 10 parts of water. Insoluble in alcohol.
Incompatibles.—It is decomposed by acids and acid salts.
Average Dose.—15 grains (1 Gm.).

Trochisci Sodii Bicarbonatis. Eng., Troches of Sodium Bicarbonate. Each troche contains about 3 grains of Sodium Bicarbonate.

Therapeutic Action.—Antacid.

Uses.—Extensively used in the treatment of hyperchlorhydria, gastric ulcers, "acidosis," etc.

Administration.—The following will illustrate some common uses of the drug:

Given alone, as in "acid intoxication," it may be ordered as follows (for child 4 years old):

℞		or
Sodii Bicarbonatis	gr. c	6|

Ft. cht. no. x.
Sig.—One in water every three hours till relieved.

Or:

℞		or
Hydrarg. Chlor. Mitis.....	gr j	|065
Sodii Bicarbonatis	gr. c	6|000

M. ft. cht. no. x.
Sig.—One in water every three hours till relieved.

The following has been recommended for headache:

℞[1]		or
Acetanilidi	gr. lxxij	4|50
Caffeinæ Citratæ,		
Camphoræ Monobrom. .....āā.	gr. xij	|75
Sodii Bicarbonatis	gr. xlviij	3|00

M. ft. cap. no. xxiv.
Sig.—One every half-hour until six (6) are taken.

It may also be ordered for enema:

℞		or
Sodii Bicarbonatis	℥j	30|

Sig.—Use tablespoonful to half-gallon warm water.

[1] Musser and Kelly: Practical Treatment.

Used in a preparation for cleansing the nose in infectious diseases:

℞[1]		or	
Phenolis Liq.	.....	♏vj	4
Sodii Bicarb.	.....	gr. xxx	2 0
Sodii Boratis	.....	gr. xl	2 5
Glycerini	.....	f℥ij	8 0
Aquæ Dest.	.....q. s.	f℥vj	180 0

M.

Sig.—Spray as directed.

In the treatment of flatulence, hysteria, etc.:

℞[2]		or	
Sodii Bicarbonatis	.....	gr. xl	3
Spir. Ammoniæ Arom.,			
Tinct. Zingiberis	.....āā.	f℥ss	15
Spir. Ætheris	.....q. s.	f℥ij	60

M.

Sig.—Two (2) teaspoonfuls in water. Repeat when necessary. (Shake-label.)

SODII BORAS (Gen. Sodii Boratis). Eng., Sodium Borate. Synonyms, Borax, Sodium Tetraborate. Formula $Na_2B_4O_7 + 10H_2O$.

Form.—Colorless prisms or white powder.

Odor and Taste.—Odorless. A sweetish, alkaline taste.

Solubility.—In 15 parts of water. Insoluble in alcohol.

Incompatibles.—Mineral acids, most metallic and alkaloidal salts.

Average Dose.—12 grains (0.75 Gm.).

Sodium Borate is contained in the Ointment of Rose Water.

Therapeutic Action.—Antiseptic.

Uses.—Sometimes employed with other agents in the treatment of nasal catarrh, stomatitis, etc.

Administration.—Not often prescribed. The following will illustrate how it may be ordered:

In the treatment of chronic nasal catarrh:

℞[3]		or	
Phenolis	.....	gr. iv	26
Sodii Bicarb.,			
Sodii Boratis	.....āā.	gr. xx	1 30
Glycerini	.....	f3iv	15 00
Aquæ	..... q. s.	f℥iv	120 00

M.

Sig.—Spray as directed.

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[1] Musser and Kelly: Practical Treatment.

[2] Shoemaker: Materia Medica and Therapeutics.

[3] Hughes: Practice of Medicine.

SODII BROMIDUM.—See Bromides, p. 100.

SODII CARBONAS MONOHYDRATUS. Eng., Monohydrated Sodium Carbonate. Formula, $Na_2CO_3 + H_2O$.

Form.—A white powder.

Odor and Taste.—Odorless. A strongly alkaline taste.

Solubility.—In 3 parts of water. Insoluble in alcohol.

Average Dose.—4 grains (0.25 Gm.).

Therapeutic Action.—Antacid.

Uses.—Seldom used for effect. It is sometimes prescribed in capsules with exsiccated ferrous sulphate so as to form fresh ferrous carbonate in the stomach.

SODII CHLORIDUM. Eng., Sodium Chloride. Synonyms, Salt, Common Salt. Formula, NaCl.

Form.—Colorless crystals or white crystalline powder.

Odor and Taste.—Odorless. Saline taste.

Solubility.—In 2.8 parts of water. Almost insoluble in alcohol.

Average Dose.—Emetic, 4 drachms (15 Gm.).

Therapeutic Action.—Emetic. An essential agent in metabolism.

Uses.—A valuable emetic, etc., but seldom a prescription ingredient.

Administration.—A teaspoonful of table salt is used to each glass of lukewarm water, and the patient required to take one glass after another until emesis is induced.

SODII CITRAS.—See Citrates, p. 23.

LIQUOR SODÆ CHLORINATÆ. Eng., Solution of Chlorinated Soda. Synonym, Labarraque's Solution. An aqueous solution of chlorine compounds of sodium, containing not less than 2.5 per cent. of available chlorine.

Therapeutic Action.—Antiseptic, disinfectant.

SODII CYANIDUM. Eng., Sodium Cyanide. Sodium cyanide replaces potassium cyanide of the U. S. P., viii.

Uses.—This drug is seldom a prescription ingredient. It is sometimes used by the profession in solutions of about 1 per cent., to remove the stains of silver nitrate.

SODII GLYCEROPHOSPHAS.—See Glycerophosphates, p. 30.

SODII HYDROXIDUM. Eng., Sodium Hydroxide. Synonym, Caustic Soda.

Form.—Dry, white or nearly white flakes, fused masses or pencils.

Odor and Taste.—Odorless. A caustic taste.

Solubility.—In about 0.9 part of water. Very soluble in alcohol.

Liquor Sodii Hydroxidi. Eng., Solution of Sodium Hydroxide. A colorless aqueous solution containing about 5 per cent. of the drug.

Average Dose.—15 minims (1 mil).

Therapeutic Action.—Antacid, caustic.

Uses.—Seldom prescribed.

SODII HYPOPHOSPHIS.—See Hypophosphites, p. 29.

SODII INDIGOTINDISULPHONAS. Eng., Sodium Indigotindisulphonate. Synonym, Indigo Carmine.

SODII IODIDUM.—See Iodides, p. 202.

SODII NITRIS (Gen., Sodii Nitritis). Eng., Sodium Nitrite. Formula $NaNO_2$.

Form.—White or nearly white masses, pencils or colorless crystals.

Odor and Taste.—Odorless; a mild saline taste.

Solubility.—In about 1.5 parts of water, slightly soluble in alcohol.

Incompatibles.—Acetanilide, antipyrine, chlorates, chromates, gold chloride, hypophosphites, iodides, mercury salts, permanganates, sulphites, tannic acid.

Average Dose.—1 grain (0.06 Gm.).

Therapeutic Action.—Circulatory depressant.

Uses.—Used to lower blood-pressure in the treatment of angina pectoris, chronic nephritis, etc.

Administration.—The dosage as recommended in many works on practice is probably much too high for the average case. It is better to begin with a small dose and gradually increase as the tolerance of the patient is ascertained.

Sodium Nitrite is prescribed in solution and should be well diluted before being administered. It is frequently associated with Sodium Iodide.

In the treatment of hypertension:

℞		or
Sodii Nitritis	gr. xvj	1
Sodii Iodidi	gr. clx	10
Aquæ	q. s. f℥iv	120

M.

Sig.—Teaspoonful with water or milk two hours after meals.

Or:

℞		or
Sodii Nitritis	gr. L	3
Sodii Iodidi	℥j	30
Aquæ	q. s. f℥ij	60

M.

Sig.—Begin with ten (10) drops as directed.

SODII PERBORAS. Eng., Sodium Perborate. It contains not less than 9 per cent. of available oxygen.

Average Dose.—1 grain (0.06 Gm.).

SODII PHENOLSULPHONAS.—See Phenol, p. 259.

SODII PHOSPHAS (Gen., Sodii Phosphatis). Eng., Sodium Phosphate. Synonym, Sodium Orthophosphate. Formula, $Na_2HPO_4 + 12H_2O$.

Form.—Large colorless prisms of granular salt.

Odor and Taste.—Odorless. A cooling, saline but disagreeable taste.

Solubility.—In about 2.7 parts of water. Insoluble in alcohol.

Average Dose.—1 drachm (4 Gm.).

Official Preparation.

Sodii Phosphas Effervescens. Eng., Effervescent Sodium Phosphate. A granular powder containing 20 per cent. of Exsiccated Sodium Phosphate with Citric and Tartaric Acids and Sodium Bicarbonate.

Average Dose.—120 grains (8 Gm.).

Sodii Phosphas Exsiccatus. Eng., Exsiccated Sodium Phosphate. Sodium Phosphate deprived of its water of crystallization.

Average Dose.—30 grains (1 Gm.).

Unofficial Preparation (U. S. P., viii).

Liquor Sodii Phosphatis Compositus. Eng., Compound Solution of Sodium Phosphate. Sodium Phosphate, 1000 Gm.; Sodium Nitrate, Citric Acid, and Distilled Water, to make 1000 mils.

Average Dose.—2 fluidrachms (8 mils).

Therapeutic Action.—Hydragogue purgative.

Uses.—The effervescing salt, particularly, is a popular morning laxative. It is also used in conditions characterized by jaundice.

Administration.—Effervescing Sodium Phosphate, if dispensed in boxes, rapidly deteriorates and loses its effervescing quality. As it is a granular salt, it could not readily be emptied from a regular small-mouth prescription bottle.

It is put on the market in 2-, 4-, and 16- ounce, large-mouth, colored bottles with special waxed corks and caps. It should be prescribed in these sizes only, so that the original bottle may be dispensed by merely removing the trade label and putting on the one desired.

℞

Sodii Phos. Effervs. ..... ℥iv or 120|

Sig.—Heaping teaspoonful, in glass of water, on arising.

The solution may be ordered as:

℞

Liq. Sodii Phos. Co. ..... f℥iv or 120|

Sig.—Two (2) teaspoonfuls, with glass of water, on arising.

Sodium Phosphate is often prescribed in bulk to be taken in water.

SODII SALICYLAS.—See Salicylates, p. 36.

SODII SULPHAS (Gen., Sodii Sulphatis). Eng., Sodium Sulphate. Synonyms, Glauber's Salt, Horse Salts.

Form.—Large, colorless prisms.

Odor and Taste.—Odorless. A bitter saline taste.

Solubility.—In about 1 part of water. Insoluble in alcohol.

Average Dose.—4 drachms (15 Gm.).

Therapeutic Action.—Hydragogue purgative.

Uses.—Sometimes used to produce purgation, particularly when it is desired to deplete the body liquid.

Administration.—It is not often prescribed. The following will illustrate its use:

As a laxative:

℞		or
Sodii Sulphatis	℥j	30
Potassii Bitartratis	℥ij	60

M.

Sig.—Teaspoonful in glass of hot water before breakfast.

SODII SULPHIS EXSICCATUS. Eng., Exsiccated Sodium Sulphite.

Form.—White powder.

Odor and Taste.—Odorless. A cooling, saline, sulphurous taste.

Solubility.—In 2.3 parts of water; sparingly soluble in alcohol.

Average Dose.—15 grains (1 Gm.).

Therapeutic Action.—Antiseptic.

Uses.—Seldom prescribed.

SODII THIOSULPHAS. Eng., Sodium Thiosulphate. Synonyms, Sodium Hyposulphite, Hypo.

Form.—Colorless prisms.

Odor and Taste.—Odorless. A cooling, afterward bitter taste.

Solubility.—In about 0.5 part of water. Insoluble in alcohol.

Average Dose.—15 grains (1 Gm.).

Therapeutic Action.—Antiseptic.

Uses.—Used externally for eczema, scabies, tinea, and various other skin diseases. Seldom given internally. Extensively used in photography.

Administration.—The following shows how it may be prescribed.

In the treatment of tinea versicolor:

℞[1]		or
Sodii Thiosulphatis	ʒiij	12
Glycerini	fʒij	8
Aquæ q. s.	fʒiv	120

M.
Sig.—Apply frequently.

POTASSII ET SODII TARTRAS.—See Potassium, p. 272.

SPARTEINÆ SULPHAS.

Latin, Sparteinæ Sulphas (Gen., Sparteinæ Sulphatis). Eng., Sparteine Sulphate. The sulphate of an alkaloid obtained from Scoparius (*Cytisus Scoparius*).

Form.—Colorless crystals or powder.

Odor and Taste.—Odorless. A slightly saline and somewhat bitter taste.

Solubility.—In 1.1 parts of water, or 3 parts of alcohol.

Average Dose.—1/6 grain (0.01 Gm.).

Therapeutic Action.—Diuretic, circulatory stimulant.

Uses.—Sparteine sulphate is used in the treatment of heart and kidney conditions.

Administration.—The following will illustrate the manner of prescribing:

In the treatment of chronic valvular disease:

℞[2]		or	
Caffeinæ Citratæ	ʒss	2	00
Strychninæ Sulph.	gr. ⅓		02
Sparteinæ Sulph.	gr. iij		20

M. ft. cap. no. xij.
Sig.—One every four hours.

SPIGELIA.

Latin, Spigelia. Eng., Spigelia. Synonym, Pinkroot. The dried rhizome and roots of *Spigelia marilandica.*

Average Dose.—60 grains (4 Gm.).

Official Preparation.

Fluidextractum Spigeliæ. Eng., Fluidextract of Spigelia.
Average Dose.—1 fluidrachm (4 mils).

[1] Hughes: Practice of Medicine.
[2] Anders: Practice of Medicine.

Therapeutic Action.—Vermifuge.

Uses.—Has been used for the removal of roundworms, and in connection with other measures for pinworms. "Pinkroot and Senna" was once a popular remedy for this purpose. Seldom prescribed.

Spiritus Ætheris.—See Æther.
Spiritus Ætheris Nitrosi.—See Æther.
Spiritus Ammoniæ Aromaticus.—See Ammonium.
Spiritus Amygdalæ Amaræ.—See Amygdala.
Spiritus Anisi.—See Anisum.
Spiritus Aurantii Compositus.—See Aurantium.
Spiritus Camphoræ.—See Camphora.
Spiritus Chloroformi.—See Chloroformum.
Spiritus Cinnamomi.—See Cinnamomum.
Spiritus Glycerylis Nitratis.—See Glycerylis Nitras.
Spiritus Juniperi.—See Oleum Juniperi.
Spiritus Juniperi Compositus.—See Oleum Juniperi.
Spiritus Lavandulæ.—See Oleum Lavandulæ Florum.
Spiritus Menthæ Piperitæ.—See Mentha Piperita.
Spiritus Menthæ Viridis.—See Mentha Viridis.

SPIRITUS MYRCIÆ.

(*Not Official.*)

Latin, Spiritus Myrciæ. Eng., Spirit of Myrcia. Synonym, Bay Rum.

A liquid containing the Oils of Myrcia, Orange-peel, and Pimenta, in about 65 per cent. alcohol.

Bay Rum is a pleasant vehicle for external applications and represents enough aromatic oils and alcohol to have some therapeutic value. The following will illustrate its use:

In the treatment of seborrhea:

℞[1]		or	
Betanaphtholis	ʒij		8
Alcoholis	fʒiij		90
Spir. Myrciæ	q. s. fʒvj		180

M.

Sig.—Apply twice daily.

In the treatment of alopecia:

℞[2]		or	
Resorcinolis	gr. lxxx		5|0
Phenolis	gr. xx		1|3
Spiritus Myrciæ	q. s. fʒiv		120|0

M.

Sig.—Apply as directed.

[1] Ohmann-Dumesnil: Diseases of the Skin.
[2] Stelwagon: Diseases of the Skin.

STAPHISAGRIA.

Latin, Staphisagria. Eng., Staphisagria. Synonym, Stavesacre. The ripe seeds of *Delphinium staphisagria.*

Average Dose.—1 grain (0.06 Gm.).

Official Preparation.

Fluidextractum Staphisagriæ. Eng., Fluidextract of Staphisagria.
Average Dose.—1 minim (0.05 mil).

Therapeutic Action.—Irritant, antiparasitic, depressant.

Uses.—Has been used in the treatment of scabies, pediculosis, etc. Seldom prescribed.

STILLINGIA.

Latin, Stillingia. Eng., Stillingia. Synonym, Queen's Root. The dried root of *Stillingia sylvatica.*

Average Dose.— 30 grains (2 Gm.).

Official Preparation.

Fluidextractum Stillingiæ. Eng., Fluidextract of Stillingia.
Average Dose.—30 minims (2 mils).

Therapeutic Action.—Has been classed as an alterative.

Uses.—It is a constituent of many pharmaceutical and proprietary remedies for syphilis, rheumatism, etc. Seldom prescribed.

STRAMONIUM.

Latin, Stramonium. Eng., Stramonium. Synonym, Jamestown (Jimson) Weed. The dried leaves of *Datura Stramonium* or of *Datura Tatula.*

Average Dose.—1 grain (0.06 Gm.).

Official Preparations.

Extractum Stramonii. Eng., Extract of Stramonium. A soft solid about five times the strength of the crude drug.
Average Dose.—⅙ grain (0.01 Gm.).

The pilular and the powdered extract are both official.

Tinctura Stramonii. Eng., Tincture of Stramonium. Represents 10 per cent. of the drug.
Average Dose.—8 minims (0.5 mil).

Unguentum Stramonii. Eng., Stramonium Ointment. Contains 10 per cent. of the extract (pilular).

Therapeutic Action.—Antispasmodic, anodyne, mydriatic.

Uses.—Stramonium is principally used in the treatment of asthmatic attacks.

Administration.—The leaves are generally smoked, alone or with other agents. The tincture is sometimes given by mouth, but altogether they are not often prescribed. The following will illustrate a way of ordering the drug.

In the form of a cigarette in the treatment of asthma:

℞ or

Stramonii ..... ℥j 30|

Sig.—Use as a cigarette when necessary.

STRONTIUM.

The metal is not official, but the U. S. P. contains the following salts:

STRONTII BROMIDUM.—See Bromides, p. 100.
STRONTII IODIDUM.—See Iodides, p. 202.
STRONTII SALICYLAS.—See Salicylates, p. 36.

STROPHANTHUS.

Latin, Strophanthus. Eng., Strophanthus. The ripe seed of *Strophanthus Kombé* or of *Strophanthus hispidus.*

Average Dose.—1 grain (0.06 Gm.).

Official Preparation and Constituent.

Tinctura Strophanthi. Eng., Tincture of Strophanthus. Represents 10 per cent. of the drug.

Average Dose.—8 minims (0.5 mil).

Strophanthinum. Eng., Strophanthin. A glucoside or mixture of glucosides obtained from Strophanthus (0.45 to 1 per cent.).

Form.—A white or faintly yellowish powder.

Odor and Taste.—Odorless. Intensely bitter taste.

Solubility.—Very soluble in water; less soluble in alcohol.

Average Dose.—Mouth, 1/60 grain (0.001 Gm.); intravenous, 1/80 grain (0.00075 Gm.).

Therapeutic Action.—Heart tonic and stimulant, vasoconstrictor.

Uses.—Tincture of Strophanthus and Strophanthin are used almost exclusively for heart weakness and irregularity.

Administration.—The tincture is given by mouth. It is usually prescribed alone. Strophanthin is sometimes employed hypodermically by the physician, but is seldom a prescription

ingredient. Owing to the high toxicity of these agents, the patient should be under the frequent observation of the physician during their use.

STRYCHNINA.

See Nux Vomica, p. 226.

STRYCHNINÆ NITRAS.

See Nux Vomica, p. 226.

STRYCHNINÆ SULPHAS.

See Nux Vomica, p. 226.

STYRAX.

Latin, Styrax. Eng., Storax. Synonym, Liquid Storax. A balsam obtained from the wood and inner bark of *Liquidambar orientalis.*

A semiliquid, grayish, sticky, opaque mass; it deposits, on standing, a dark-brown stratum, and has an agreeable odor and balsamic taste.

Average Dose.—15 grains (1 Gm.).

Therapeutic Action.—Antiseptic, expectorant, carminative.

Uses.—It is a constituent of some preparations for bronchitis, etc., but is seldom a prescription ingredient.

SULPHONETHYLMETHANUM.

Latin, Sulphonethylmethanum (Gen., Sulphonethylmethani). Eng., Sulphonethylmethane. Synonym, Trional.

Form.—A colorless crystalline powder.

Odor and Taste.—Odorless and almost tasteless.

Solubility.—In 200 parts of water; readily soluble in alcohol.

Average Dose.—12 grains (0.75 Gm.).

Therapeutic Action.—Hypnotic.

Uses.—Extensively used to induce sleep when the insomnia is not the result of pain or discomfort.

Administration.—This is prescribed alone and usually in powder.

To produce sleep:

℞		or	
Sulphonethylmethani	℥j		4|

Ft. cht. no. v.

Sig.—One at 8 P.M.; repeat at 10 if necessary.

If 10 P.M. is the usual time for sleep, one is given two hours before, and is repeated soon after 10 if sleepiness has not been induced.

SULPHONMETHANUM.

Latin, Sulphonmethanum (Gen., Sulphonmethani). Eng., Sulphonmethane. Synonym, Sulphonal.

Form.—A colorless crystalline powder.

Odor and Taste.—Odorless and nearly tasteless.

Solubility.—In 365 parts of water or 60 parts of alcohol.

Average Dose.—12 grains (0.75 Gm.).

Therapeutic Action.—Hypnotic.

Uses.—Sulphonal is used to induce sleep when the insomnia is not the result of pain or discomfort.

Administration.—This is prescribed alone and usually in powder.

For the relief of insomnia:

℞		or	
Sulphonmethani	ʒj		4|

Ft. cht. no. v.

Sig.—One at night if necessary.

This is usually given about two hours before the time that it is desired for the patient to sleep, and may be repeated once, if necessary.

SULPHUR.

Sulphur is official in three forms.

SULPHUR SUBLIMATUM. Eng., Sublimed Sulphur. Synonyms, Sulphur, Flowers of Sulphur.

Form.—A fine yellow powder.

Odor and Taste.—A slight characteristic odor and faintly acid taste.

Solubility.—Insoluble in water or alcohol.

Average Dose.—1 drachm (4 Gm.).

Official Preparations.

SULPHUR LOTUM. Eng., Washed Sulphur. Prepared by washing Sublimed Sulphur with ammonia water and water.

Form.—A fine yellow powder.

Odor and Taste.—Odorless and tasteless.

Solubility.—Insoluble in water or alcohol.

Average Dose.—1 drachm (4 Gm.).

Washed Sulphur is contained in Compound Powder of Glycyrrhiza.

SULPHUR PRÆCIPITATUM. Eng., Precipitated Sulphur. Made by acting upon Sublimed Sulphur with calcium hydroxide, precipitating the solution with hydrochloric acid and washing the precipitate.

Form.—A fine amorphous powder of a pale lemon-yellow color.
Odor and Taste.—Odorless and tasteless.
Solubility.—Insoluble in water or alcohol.
Average Dose.—1 drachm (4 Gm.).

Unguentum Sulphuris. Eng., Sulphur Ointment. Contains 15 per cent. of Sublimed Sulphur in Benzoinated Lard.

Therapeutic Action.—Antiseptic, antiparasitic, laxative, diaphoretic.

Uses.—Internally it is sometimes used as a laxative and as an adjuvant to the bismuth treatment of diarrhea and dysentery. Externally it is extensively employed in the treatment of parasitic skin diseases, as scabies, tinea, etc.

Administration.—Owing to its fine state of subdivision, its purity and freedom from odor and taste, the Precipitated Sulphur would seem to be the preferable form for medicinal use.

Internally Sulphur is not often employed by the profession, though it is sometimes prescribed either alone or with some other agents, as Potassium Bitartrate.

Externally it is frequently employed in ointments.

In the treatment of grain-itch:

℞[1]		or
Betanaphtholis	gr. xxx	2|0
Sulphuris Præcip.	gr. xl	2|5
Adipis Benzoinati	q. s. ℥j	30|0

M.
Sig.—Apply as directed.

Used as an antiparasitic:

℞[2]		or
Sulphuris Præcip.	℥ij	8
Saponis Mollis		
Olei Cadini	āā. ℥j	4
Adipis Benzoinati	q. s. ℥j	30

M.
Sig.—Apply as directed.

Used in the treatment of ringworm of the scalp:

℞[3]		or
Betanaphtholis	℥ss	2
Olei Cadini	℥j	4
Ung. Sulphuris	q. s. ℥j	30

M.
Sig.—Apply as directed.

[1] **Musser and Kelly: Practical Treatment.**
[2] **Stelwagon: Diseases of the Skin.**
[3] *Ibid.*

In the treatment of scabies:

℞[1]		or	
Sulphuris Loti,			
Olei Cadini,			
Cretæ Præp.	āā. ʒij		8
Saponis Mollis	ʒv		19
Adipis	q. s. ʒij		60

M.
Sig.—Rub in thoroughly.

As an application in pruritic diseases of the skin:

℞[2]		or	
Phenolis	gr. v		32
Sulphuris Præcip.	gr. xxx	2	00
Camphoræ	gr. x		65
Ung. Zinci Oxidi	q. s. ʒj	30	00

M.
Sig.—Apply frequently to irritable surface.

SUMBUL.

Latin, Sumbul. Eng., Sumbul. Synonym, Muskroot. The rhizome and roots of *Ferula Sumbul*.

Average Dose.—30 grains (2 Gm.).

Official Preparations.

Extractum Sumbul. Eng., Extract of Sumbul.
Average Dose.—4 grains (0.25 Gm.).

Fluidextractum Sumbul. Eng., Fluidextract of Sumbul.
Average Dose.—30 minims (2 mils).

Therapeutic Action.—Classed as a stomachic, carminative, antispasmodic and nervine.

Uses.—Employed in the treatment of nervousness, neurasthenia, hysteria, flatulence, etc.

Administration.—The extract is the preparation usually employed. It is given in capsules and generally with other agents.

In the treatment of palpitation in hysteric subjects:

℞[3]		or	
Strychninæ Sulph.	gr. 1/30		02
Zinci Valeratis	gr. x		65
Ext. Sumbul	gr. x		65
Ext. Hyoscyami	gr. v		32

M. ft. cap. no. x.
Sig.—One after each meal.

[1] Ohmann-Dumesnil: Diseases of the Skin
[2] Shoemaker: Materia Medica and Therapeutics.
[3] Anders: Practice of Medicine.

In the treatment of neurasthenia, hysteria, etc.:

℞[1]		or
Arseni Trioxidi	gr. ss	.03
Asafœtidæ Pulv.	gr. x	.65
Ext. Sumbul,		
Ferri Sulph. Exsic.	āā. gr. xx	1.30

M. ft. cap. no. xx.
Sig.—One after each meal.

SUPRARENALUM SICCUM.

Latin, Suprarenalum Siccum. (Gen., Suprarenali Sicci). Eng., Dried Suprarenals (Glandulæ Suprarenales Siccæ, U. S. P., viii—Desiccated Suprarenal Glands).

The suprarenal glands of animals, which are used for food by man, cleaned, dried, freed from fat, and powdered and containing not less than 0.4 per cent. nor more than 0.6 per cent. of epinephrin, the active principle of the suprarenal gland. One part of Dried Suprarenal represents approximately 6 parts of fresh glands, free from fat.

A light, yellowish-brown powder.

Average Dose.—4 grains (0.25 Gm.).

Unofficial Preparation.

Epinephrina. Eng., Epinephrine. The blood-pressure-raising principle of the suprarenal gland.

Average Dose.—7½ minims (0.5 mil) of a 1 : 1000 solution.

Therapeutic Action.—Cardiac stimulant and vasoconstrictor.

Uses.—Employed in solutions for local anesthesia. Extensively used for asthma, turgescent rhinitis, sinusitis, otitis media, nasal or gastric hemorrhage, nausea, pulmonary edema, hemorrhoids, etc.

Administration.—It should be particularly remembered that these preparations are incompatible with alkalies. The preparation under the trade name Adrenalin is extensively used in the form of the Solution of Adrenalin Chloride 1 : 1000, Adrenalin Ointment, Suppositories, Inhalant, etc.

For systemic effect the drug is administered by needle.

The solution does not keep well, and for hypodermic purposes the aseptic ampoules are desirable.

[1] Shoemaker: Materia Medica and Therapeutics.

For preparing small amounts of solutions for local anesthesia, tablets can be obtained (as of novocaine) containing the proper proportion of adrenalin.

The dried product, when employed, is usually administered in capsules.

As a nasal spray:

℞		or
Adrenalin Chlor. (Sol. 1:1000)	f℥iss	6
Liq. Antiseptici	f℥iij	12
Aquæ q. s.	f℥iij	90

M.

Sig.—Use to spray nose every three hours.

This is much to be preferred to the common formula calling for the alkaline solution, which rapidly decomposes the adrenalin.

In a local anesthetic solution:

℞[1]		or	
Cocainæ Hydrochlor.	gr. j		065
Sodii Chloridi	gr. iij		200
Adrenalin Chloridi (Sol. 1:1000)	♏v		300
Aquæ Destillatæ q. s.	f℥j	30	000

M.

Sig.—Formula.

Unless to be used at once, it is better to omit the adrenalin from the prescription, and add it immediately before using.

In the treatment of erythema venenatum:

℞2		or	
Cocainæ Hydrochlor.	gr. x		65
Adrenalin Chloridi (Sol. 1:1000)	℥ss	15	00
Aquæ Rosæ q. s.	f℥vj	180	00

M.

Sig.—Apply every two hours.

Syrupus.—See Saccharum.
Syrupus Acaciæ.—See Acacia.
Syrupus Acidi Citrici.—See Acidum Citricum.
Syrupus Acidi Hydriodici.—see Iodum.
Syrupus Aurantii.—See Aurantium.
Syrupus Aurantii Florum.—See Aurantium.
Syrupus Calcii Lactophosphatis.—See Calcium.
Syrupus Ferri Iodidi.—See Ferrum.
Syrupus Hypophosphitum.—See Acidum Hypophosphorosum.
Syrupus Ipecacuanhæ.—See Ipecacuanha.

[1] White and Martin: Genito-urinary and Venereal Diseases.
[2] Ohmann-Dumesnil: Diseases of the Skin.

Syrupus Lactucarii.—See Lactucarium.
Syrupus Picis Liquidæ.—See Pix Liquida.
Syrupus Pruni Virginianæ.—See Prunus Virginiana.
Syrupus Rhei.—See Rheum.
Syrupus Rhei Aromaticus.—See Rheum.
Syrupus Sarsaparillæ Compositus.—See Sarsaparilla.
Syrupus Scillæ.—See Scilla.
Syrupus Scillæ Compositus.—See Scilla.
Syrupus Senegæ.—See Senega.
Syrupus Sennæ.—See Senna.
Syrupus Tolutanus.—See Balsamum Tolutanum.
Syrupus Zingiberis.—See Zingiber.

TALCUM PURIFICATUM.

Latin, Talcum Purificatum (Gen., Talci Purificati). Eng., Purified Talc. A purified, native, hydrous magnesium silicate sometimes containing a small amount of aluminum silicate.

Form.—A white powder.

Odor and Taste.—Odorless and tasteless.

Solubility.—Insoluble in water and alcohol.

It is used as an absorbent and protective and as a diluent for more active agents in the treatment of many moist skin affections, and for cosmetic purposes.

TARAXACUM.

Latin, Taraxacum. Eng., Taraxacum. Synonym, Dandelion. The dried rhizome and roots of *Taraxacum officinale.*

Official Preparations.

Extractum Taraxaci. Eng., Extract of Taraxacum.
Average Dose.—15 grains (1 Gm.).

Fluidextractum Taraxaci. Eng., Fluidextract of Taraxacum.
Average Dose.—2½ fluidrachms (10 mils).

Therapeutic Action.—Bitter tonic, laxative.

Uses.—Sometimes used as adjuvant to other tonics or purgatives. Seldom prescribed.

TEREBINTHINA.

Latin, Terebinthina. Eng., Turpentine. A concrete oleoresin obtained from various species of Pinus.

Turpentine is not now official, but the Pharmacopœia contains the following:

Official Constituents and Preparations.

OLEUM TEREBINTHINÆ. Eng., Oil of Turpentine. Synonyms, Spirit of Turpentine, Turpentine. A volatile oil distilled from Turpentine.

Form.—A thin, colorless liquid.

Odor and Taste.—A characteristic odor and taste.

Solubility.—Almost insoluble in water. Soluble in 5 parts of alcohol.

Oleum Terebinthinæ Rectificatum. Eng., Rectified Oil of Turpentine.

Form, Odor, Taste, Solubility.—See Oleum Terebinthinæ.

Average Dose.—5 minims (0.3 mil).

Ceratum Resinæ. Eng., Rosin Cerate. Synonym, Basilicon Ointment. Rosin, 350 Gm.; Yellow Wax, 150 Gm.; Lard, 500 Gm.

Emulsum Olei Terebinthinæ. Eng., Emulsion of Oil of Turpentine. Rectified Oil of Turpentine, 15 mils; Expressed Oil of Almond, 5 mils; Syrup, 25 mils; Acacia, 15 Gm.; Water, to 100 mils.

Average Dose.—½ fluidrachm (2 mils).

Linimentum Terebinthinæ. Eng., Turpentine Liniment. Rosin Cerate, 650 Gm.; Oil of Turpentine, 350 Gm.

TEREBENUM. Eng., Terebene. Obtained by the action of concentrated sulphuric acid on Oil of Turpentine.

Form.—A colorless liquid.

Odor and Taste.—An agreeable, thyme-like odor, and an aromatic, somewhat terebinthinate taste.

Solubility.—Only slightly in water. Soluble in 3 parts alcohol.

Average Dose.—4 minims (0.25 mil).

Therapeutic Action.—Antiseptic, diuretic, carminative, anthelmintic, rubefacient, counterirritant.

Uses.—Quite extensively employed by mouth, rectum, or as an application for wounds, sprains, rheumatism, intestinal worms, tympanites, typhoid fever, chronic nephritis, bronchitis, etc.

Administration.—Bromine, chlorine and iodine are incompatible with Oil of Turpentine in concentration, but iodine is sometimes prescribed with it when the agents are in very dilute form.

Oil of Turpentine is very irritating to mucous membrane; so should always be administered in an emulsion or with some bland oil.

The Oil is frequently used in "turpentine steeps" for renal colic, gall-stone colic, intestinal distention, dysentery, etc. They are ordered prepared by instructing that a tablespoonful of the oil of turpentine be used to each bowl of hot water and large folded bath towels or pieces of flannel be wrung out of this and applied as hot

as the patient can tolerate. Fresh application is made about every three minutes.

In typhoid fever, etc.:

℞		or	
Emul. Ol. Terebinth.	f℥iv		120

Sig.—Half (½) teaspoonful every four hours.

In the treatment of acute bronchitis:

℞[1]		or	
Terebeni	f℥ij		8
Creosoti	f℥ss		2
Acaciæ	q. s.		
Aquæ Chloroformi	q. s. f℥iij		90

M. ft. emul.

Sig.—Teaspoonful with water every four hours.

TERPINI HYDRAS.

Latin, Terpini Hydras (Gen., Terpini Hydratis). Eng., Terpin Hydrate.

Form.—Colorless prisms.

Odor and Taste.—Nearly odorless and having a slightly aromatic and somewhat bitter taste.

Solubility.—In 200 parts of water or in 13 parts of alcohol.

Average Dose.—4 grains (0.25 Gm.).

Therapeutic Action.—Diuretic, antiseptic, lessens bronchial secretion.

Uses.—Employed in the treatment of bronchitis, phthisis, whooping-cough, etc.; also for gonorrhea, cystitis, and kindred conditions.

Administration.—Usually prescribed in capsules or in hydro-alcoholic solutions such as Aromatic Elixir.

TERRA SILICÆ PURIFICATA.

Latin, Terra Salicæ Purificata. Eng., Purified Siliceous Earth. Synonyms, Purified Kieselguhr, Purified Infusorial Earth.

THEOBROMINÆ SODIO-SALICYLAS.

Latin, Theobrominæ Sodio-Salicylas (Gen., Theobrominæ Sodio-Salicylatis). Eng., Theobromine Sodio-Salicylate. Synonym, Diuretin.

[1] Hughes: Practice of Medicine.

Form.—A white powder.

Odor and Taste.—Odorless; nearly tasteless.

Solubility.—In 1 part of water, slightly soluble in alcohol.

Average Dose.—15 grains (1 Gm.).

Therapeutic Action.—Diuretic.

Uses.—Used in the treatment of those conditions where increased diuresis is indicated, as nephritis, dropsy, high blood-pressure, etc.

Administration.—If the drug has been long exposed to air, it becomes partly insoluble in water, and makes a milky mixture. The fresh powder makes a colorless solution.

It is practically always prescribed alone in aqueous solution, as:

℞		or	
Theobrom. Sodio-Salicyl.	3iv		15
Aquæ Dest.	q. s.	f℥ij	60

M.

Sig.—Teaspoonful in water every four hours.

THEOPHYLLINA.

Latin, Theophyllina. Eng., Theophylline. Synonym, Dimethylxanthine. An organic base isomeric with theobromine. It is found in small amounts in tea-leaves (*Thea Sinesis*) and is also prepared synthetically.

A white, odorless, bitter, sparingly soluble powder.

Average Dose.—4 grains (0.25 Gm.).

THYMOL.

Latin, Thymol (Gen., Thymolis). Eng., Thymol. A phenol occurring in the volatile oil of thyme and in some other volatile oils.

Form.—Large, colorless prisms.

Odor and Taste.—An aromatic, thyme-like odor and a pungent, aromatic taste, with a very slight caustic effect upon the lips.

Solubility.—In about 1010 parts of water. Soluble in alcohol, oils, etc.

Incompatibles.—Should not be triturated with acetanilid, antipyrine, camphor, monobromated camphor, hydrated chloral, menthol, phenol, phenyl salicylate, quinine sulphate or prescribed with spirit of nitrous ether or gold salts.

Average Dose.—Antiseptic, 2 grains (0.125 Gm.); anthelmintic, 15 grains (1 Gm.) per day.

Official Salt.

Thymolis Iodidum. Eng., Thymol Iodide. Synonyms, Thymol Diiodide, Aristol.

A brown or yellowish powder, almost odorless and insoluble in water.

Sometimes used as a dusting powder for cutaneous lesions.

Seldom employed.

Therapeutic Action.—Antiseptic, anthelmintic.

Uses.—Principally employed for hookworms; also used in solution with other agents as a mouth-wash, nasal spray, gargle, etc., in the treatment of such conditions as nasal catarrh, stomatitis, pharyngitis and pyorrhœa alveolaris.

Administration.—While Thymol is a constituent of some ointments, antiseptic solutions, etc., its more common employment is for intestinal parasites, particularly hookworm. For this purpose it is usually administered in doses of from 30 to 80 grains. It may be prescribed in a powdered state suspended in water by means of Acacia, but is more commonly administered in capsules, either alone or with sugar of milk. When well triturated with an inert powder, as sugar of milk, it is supposed to be less irritating to the gastric mucosa, and less apt to form concretions when the gelatin of the capsule is dissolved.

Not more than 5 to 7 grains of the powder should be prescribed to the capsule. As the safety of large doses depends on the comparative insolubility of the drug in the normal intestinal juices, care should be exercised that the patient has and keeps the intestinal tract free from alcoholics, oils and fats.

The drug should be eliminated promptly, as it is slightly soluble even in water. A common method of employment is as follows:

℞ or

Thymolis,

Sacchari Lactis .....āā. gr. L 3|

M. ft. cap. no. xx.

Sig.—Take five (5) at 8, 9, 10, and 11 A.M.

Written instructions as to diet, purgative, etc., should be given the patient. The following would illustrate:—

Saturday.—Eat or drink only skimmed milk, buttermilk, rice broth, gelatin, toast, jelly, baked apples, sherbet, tea, coffee, lemonade, water. Nothing but water after 6 P.M. No alcoholics, oil or grease during the day.

Sunday.—Take a tablespoonful of Epsom Salt in a glass of hot lemonade at 6 A.M. Take five (5) capsules every hour beginning at 8 A.M. Repeat the salts and lemonade at 1 P.M.

Take nothing in the way of food or drink but water till 2 P.M.; can then have dry toast, jelly, gelatin, baked apples, sherbet, tea, coffee, lemonade, grape-juice, oranges. No alcoholics, oils or grease during the day.

Monday.—Same diet, etc., as Saturday.

When capsules are inadvisable the following may be used in the same way as the prescription just given:

℞		or
Thymolis	gr. L	3
Syrupi Acaciæ	q. s. f℥ij	60

M.

Sig.—"Shake."

Tablespoonful at 8, 9, 10, and 11 A.M.

The following illustrates a somewhat common employment of the drug:

In the treatment of dermatitis:

℞[1]		or	
Phenolis Liq.	f℥ss	2	0
Thymolis	gr. viij		5
Glycerini	f℥ss	15	0
Alcoholis	f℥j	30	0
Aquæ	q. s. f℥viij	240	0

M.

Sig.—Apply freely.

THYROIDEUM SICCUM.

Latin, Thyroideum Siccum (Gen., Thyroidei Sicci). Eng., Dried Thyroids. (Glandulæ Thyroideæ Siccæ—Desiccated Thyroid Glands, U. S. P., viii.)

The thyroid glands of animals, which are used for food by man, freed from connective tissue and fat, dried and powdered and containing not less than 0.17 nor more than 0.23 per cent. of iodine in thyroid combination. One part of Dried Thyroid corresponds to approximately 5 parts of the fresh glands.

A yellowish powder.

Average Dose.—1½ grains (0.1 Gm.).

Therapeutic Action.—Vasodilator; affects metabolism.

Uses.—In the treatment of myxedema, cretinism and goiter.

Administration.—Probably best given in capsules, also used in tablets.

Tinctura Aconiti.—See Aconitum.

Tinctura Aloes.—See Aloe.

[1] Stelwagon: Diseases of the Skin.

Tinctura Arnicæ.—See Arnica.
Tinctura Asafœtidæ.—See Asafœtida.
Tinctura Aurantii Amari.—See Aurantium.
Tinctura Aurantii Dulcis.—See Aurantium.
Tinctura Belladonnæ Foliorum.—See Belladonna.
Tinctura Benzoini.—See Benzoinum.
Tinctura Benzoini Composita.—See Benzoinum.
Tinctura Calumbæ.—See Calumba.
Tinctura Cannabis.—See Cannabis.
Tinctura Cantharidis.—See Cantharis.
Tinctura Capsici.—See Capsicum.
Tinctura Cardamomi.—See Cardamomum.
Tinctura Cardomomi Composita.—See Cardamomum.
Tinctura Cinchonæ.—See Cinchona.
Tinctura Cinchonæ Composita.—See Cinchona.
Tinctura Cinnamomi.—See Cinnamomum.
Tinctura Colchici Seminis.—See Colchicum.
Tinctura Digitalis.—See Digitalis.
Tinctura Ferri Chloridi.—See Ferrum.
Tinctura Gambir Composita.—See Gambir.
Tinctura Gelsemii.—See Gelsemium.
Tinctura Gentianæ Composita.—See Gentiana.
Tinctura Guaiaci.—See Guaiacum.
Tinctura Guaiaci Ammoniata.—See Guaiacum.
Tinctura Hydrastis.—See Hydrastis.
Tinctura Hyoscyami.—See Hyoscyamus.
Tinctura Iodi.—See Iodum.
Tinctura Kino.—See Kino.
Tinctura Lactucarii.—See Lactucarium.
Tinctura Lavandulæ Composita.—See Oleum Lavandulæ Florum.
Tinctura Limonis Corticis.—See Limon.
Tinctura Lobeliæ.—See Lobelia.
Tinctura Moschi.—See Moschus.
Tinctura Myrrhæ.—See Myrrha.
Tinctura Nucis Vomicæ.—See Nux Vomica.
Tinctura Opii.—See Opium.
Tinctura Opii Camphorata.—See Opium.
Tinctura Opii Deodorati.—See Opium.
Tinctura Physostigmatis.—See Physostigma.
Tinctura Pyrethri.—See Pyrethrum.
Tinctura Quassiæ.—See Quassia.
Tinctura Rhei.—See Rheum.
Tinctura Rhei Aromatica.—See Rheum.
Tinctura Sanguinariæ.—See Sanguinaria.
Tinctura Scillæ.—See Scilla.
Tinctura Stramonii.—See Stramonium.
Tinctura Strophanthi.—See Strophanthus.
Tinctura Tolutana.—See Balsamum Tolutanum.
Tinctura Valerianæ.—See Valeriana.

Tinctura Valerianæ Ammoniata.—See Valeriana.
Tinctura Veratri Viridis.—See Veratrum Viride.
Tinctura Zingiberis.—See Zingiber.

TOXITABELLÆ HYDRARGYRI CHLORIDI CORROSIVI.

See Hydrargyrum, p. 181.

TRAGACANTHA.

Latin, Tragacantha. Eng., Tragacanth. Synonym, Gum Tragacanth. The spontaneously dried, gummy exudation from the stems of *Astragalus gummifer* or from other Asiatic species of Astragalus.

Official Preparation.

Mucilago Tragacanthæ. Eng., Mucilage of Tragacanth. Contains 6 per cent. of the drug.

Dose.—Ad lib.

Therapeutic Action.—Demulcent.

Uses and Administration.—Principally used to render aqueous solutions of insoluble drugs sufficiently thick so that when the bottle is shaken the insoluble matter will remain suspended long enough to admit of a dose being poured.

TRINITROPHENOL.

Latin, Trinitrophenol (Gen., Trinitrophenolis). Eng., Trinitrophenol. Synonym, Picric Acid.

Form.—Pale-yellow prisms or scales.

Odor and Taste.—Odorless. An intensely bitter taste.

Solubility.—In 78 parts of water or 12 of alcohol.

Incompatibles.—Most substances easily oxidized. Is always prescribed alone, in solution.

Average Dose.—½ grain (0.03 Gm.).

Therapeutic Action.—Antiseptic, germicide, local anesthetic.

Uses.—The use of this drug is now almost exclusively confined to the wet dressing of burns.

Administration.—Usually prescribed alone in solution. As a dressing, particularly for burns, it may be ordered as follows:

℞		or	
Trinitrophenolis	gr. xl	2	5
Alcoholis	f3iv	15	0
Aquæ Dest.	q. s. f3viij	240	0

M.

Sig.—Use to wet dressing as directed.

It stains tissues a deep yellow, which gradually wears off in a few days. Toxic symptoms may develop from using too strong a solution or applying a weak solution to too large an area.

TRITICUM.

Latin, Triticum. Eng., Triticum. Synonym, Couch-grass. The dried rhizome and roots of *Agrophyron repens,* gathered in the spring.

Average Dose.—2 drachms (8 Gm.).

Official Preparation.

Fluidextractum Tritici. Eng., Fluidextract of Triticum.
Average Dose.—2 fluidrachms (8 mils).

Therapeutic Action.—Emollient and demulcent.

Uses.—Has been recommended in the treatment of chronic cystitis, prostatitis, urethritis, etc. Seldom prescribed.

Trochisci Acidi Tannici.—See Acidum Tannicum.
Trochisci Ammonii Chloridi.—See Ammonium.
Trochisci Cubebæ.—See Cubeba.
Trochisci Potassii Chloratis.—See Potassium.
Trochisci Sodii Bicarbonatis.—See Sodium.

ULMUS.

Latin, Ulmus. Eng., Elm. Synonym, Slippery Elm Bark. The dried bark of *Ulmus fulva.*

Therapeutic Action.—Demulcent, astringent.

Uses.—Is sometimes used internally for gastritis, dysentery, cystitis, etc., and externally it is a popular household remedy in the form of poultices, for deep-seated pain. Seldom prescribed.

Unguentum.—See Adeps.
Unguentum Acidi Borici.—See Acidum Boricum.
Unguentum Acidi Tannici.—See Acidum Tannicum.
Unguentum Aquæ Rosæ.—See Rosa.
Unguentum Belladonnæ.—See Belladonna.
Unguentum Chrysarobini.—See Chrysarobinum.
Unguentum Diachylon.—See Plumbum.
Unguentum Gallæ.—See Galla.
Unguentum Hydrargyri.—See Hydrargyrum.
Unguentum Hydrargyri Ammoniati.—See Hydrargyrum.
Unguentum Hydrargyri Dilutum.—See Hydrargyrum.
Unguentum Hydrargyri Nitratis.—See Hydrargyrum.
Unguentum Hydrargyri Oxidi Flavi.—See Hydrargyrum.

Unguentum Iodi.—See Iodum.
Unguentum Iodoformi.—See Iodoformum.
Unguentum Phenolis.—See Phenol.
Unguentum Picis Liquidæ.—See Pix Liquida.
Unguentum Stramonii.—See Stramonium.
Unguentum Sulphuris.—See Sulphur.
Unguentum Zinci Oxidi.—See Zincum.

URANII NITRAS.

Latin, Uranii Nitras. Eng., Uranium Nitrate. Light-yellow prism, odorless and having a bitter, astringent taste. Freely soluble in water or alcohol.

Average Dose.—⅙ grain (0.01 Gm.).

Seldom prescribed.

UVA URSI.

Latin, Uva Ursi. Eng., Uva Ursi. Synonym, Bearberry. The dried leaves of *Arctostaphylos Uva-ursi.*

Average Dose.—30 grains (2 Gm.).

Official Preparation.

Fluidextractum Uvæ Ursi. Eng., Fluidextract of Uva Ursi.
Average Dose.—30 minims (2 mils).

Therapeutic Action.—Astringent, diuretic.

Uses.—Uva Ursi is sometimes used in the treatment of gonorrhea, cystitis, pyelitis, dropsy, etc. Not often prescribed.

VALERIANA.

Latin, Valeriana. Eng., Valerian. The dried rhizome and roots of *Valeriana officinalis.*

Principal Constituents.—Valeric Acid, Tannic Acid, etc.

Average Dose.—30 grains (2 Gm.).

Official Preparations.

Tinctura Valerianæ. Eng., Tincture of Valerian. Represents 20 per cent. of the drug.
Average Dose.—1 fluidrachm (4 mils).

Tinctura Valerianæ Ammoniata. Eng., Ammoniated Tincture of Valerian. Represents 20 per cent. of the drug in Aromatic Spirit of Ammonia.
Average Dose.—30 minims (2 mils).

Therapeutic Action.—Nerve sedative, antispasmodic.

Uses.—The preparations of Valerian are used in the treatment of neurasthenia, hysteria, flatulence, incontinence of urine, etc.

Administration.—The odor and taste of the preparation is considered very disagreeable by many. The Ammoniated Tincture is the preparation most frequently employed. It is prescribed alone or with other agents. The unofficial Extract is sometimes used.

In nervous conditions, as enuresis, etc.:

℞		or
Tinct. Valerianæ	f℥iv	120

Sig.—Teaspoonful in water after meals.

In acute indigestion, hysteria, etc.:

℞		or
Tinct. Valerianæ Ammon.,		
Spir. Ætheris	āā. f℥ss	15

M.

Sig.—Teaspoonful in water every two hours until relieved.

In the treatment of chronic heart disease:

℞[1]		or
Digitalis Pulv.,		
Quininæ Hydrochlor.	āā. gr. xv	1
Ext. Valerianæ	3j	4

M. ft. cap. no. xxx.

Sig.—One three times a day.

VALERATES, OFFICIAL.

Incompatibles.—Acids, carbonates, most metallic salts.

AMMONII VALERAS. Eng., Ammonium Valerate.

Form.—Colorless or white plates.

Odor and Taste.—Characteristic odor and sharp, sweetish taste.

Solubility.—Very soluble in water or alcohol.

Average Dose.—8 grains (0.5 Gm.).

ZINCI VALERAS. Eng., Zinc Valerate.

Form.—White scales or powder.

Odor and Taste.—Characteristic odor, and a sweetish, astringent and metallic taste.

Solubility.—In about 70 parts of water or 22 parts of alcohol.

Average Dose.—2 grains (0.125 Gm.).

[1] Musser and Kelly: Practical Treatment.

Therapeutic Action.—Nerve sedative, antispasmodic.

Uses.—Employed in the treatment of neurasthenia, hysteria, etc.

Administration.—The official Valerates are not extensively used. They are best administered in capsules and are most often prescribed with other agents.

The unofficial Iron Valerate is sometimes employed.

The odor and taste are considered very objectionable by some and are frequently complained of even when the drugs are administered in capsules.

In the treatment of palpitation in hysteric subjects:

℞[1]		or	
Strychninæ Sulph.	gr. ⅛		.02
Ext. Hyoscyami	gr. v		.32
Zinci Valeratis	gr. x		.65
Ext. Sumbul	gr. x		.65

M. ft. cap. no. x.

Sig.—One after each meal.

VANILLINUM.

Latin, Vanillinum. Eng., Vanillin. White or nearly white crystalline needles—occurs naturally in vanilla or made synthetically.

Average Dose.—½ grain (0.03 Gm.).

Vanillin is extensively used as a flavoring agent, but is not often a prescription ingredient.

VERATRUM VIRIDE.

Latin, Veratrum Viride. Eng., Veratrum Viride. Synonyms, Veratrum (U. S. P., viii), American Hellebore, Green Hellebore. The dried rhizome and roots of *Veratrum viride.*

Average Dose.—1 grain (0.06 Gm.).

Official Preparations and Constituent.

Fluidextractum Veratri Viridis. Eng., Fluidextract of Veratrum *Average Dose.*—1½ minims (0.1 mil).

Tinctura Veratri Viridis. Eng., Tincture of Veratrum Viride. Represents 10 per cent. of the drug.

Average Dose.—8 minims (0.5 mil.).

Veratrina. Eng., Veratrine. A mixture of alkaloids obtained from the seed of *Asagræa officinalis.*

[1] Anders: Practice of Medicine.

Form.—A white or grayish-white powder.

Odor and Taste.—Odorless, but causing intense irritation and sneezing when even a minute quantity reaches the nasal mucous membrane. An acrid taste, leaving a sensation of tingling and numbness on the tongue.

Solubility.—In 1760 parts of water or 2.8 parts of alcohol.

Average Dose.—1/30 grain (0.002 Gm.).

Therapeutic Action.—Circulatory depressant, antipyretic, antispasmodic.

Uses.—Employed in the treatment of eclampsia, and other conditions characterized by high blood-pressure. Sometimes used in the early stages of acute febrile conditions.

Administration.—The tincture of veratrum viride is sometimes given by mouth. It is usually prescribed alone. For eclampsia, the drug is used by hypodermic injection, either the fluidextract, tincture, or veratrine being employed.

VIBURNUM OPULUS.

(Not Official.)

Latin, Viburnum Opulus. Eng., Viburnum Opulus. Synonym, Cramp Bark. The dried bark of *Viburnum opulus.*

Average Dose.—30 grains (2 Gm.).

Preparation.

Fluidextractum Viburni Opuli. Eng., Fluidextract of Viburnum Opulus.

Average Dose.—30 minims (2 Cc.).

Therapeutic Action.—Nerve sedative, antispasmodic, diuretic.

Uses.—Employed in the treatment of dysmenorrhea, amenorrhea, threatened abortion, etc.

Administration.—Probably the most common employment is in the form of the Elixir, as in the following for dysmenorrhea:

℞ or

Elix. Viburni Opuli ..... f℥j 30|

Sig.—Teaspoonful every hour until relieved.

VIBURNUM PRUNIFOLIUM.

Latin, Viburnum Prunifolium. Eng., Viburnum Prunifolium. Synonym, Black Haw. The dried bark of *Viburnum prunifolium* or of *V. Lentago.*

Average Dose.—30 grains (2 Gm.).

Official Preparations.

Extractum Viburni Prunifolii. Eng., Extract of Viburnum Prunifolium. A powder.

Average Dose.—8 grains (0.5 Gm.).

Fluidextractum Viburni Prunifolii. Eng., Fluidextract of Viburnum Prunifolium.

Average Dose.—30 minims (2 mils).

Therapeutic Action.—Nerve sedative, antispasmodic, diuretic.

Uses.—Frequently used in the treatment of dysmenorrhea, amenorrhea, threatened abortion, etc.

Administration.—The fluidextract is frequently employed and usually alone, as in the following for threatened abortion:

℞		or	
Flext. Viburni Prun.	f℥ij		60

Sig.—Teaspoonful three times a day.

With many patients the fluidextract produces nausea or even vomiting, so the Elixir (containing 12.5 per cent.) is often the preparation of choice or necessity. The following illustrates its use in dysmenorrhea:

℞		or	
Sodii Bromidi	℥ij		8
Elix. Viburni Prun.	q. s.	f℥j	30

M.

Sig.—Teaspoonful in water every two hours till relieved.

VIRUS VACCINICUM.

Latin, Virus Vaccinicum. Eng., Vaccine Virus. Synonyms, Smallpox Vaccine, Glycerinated Vaccine Virus, etc. The pustules of vaccinia or cowpox from healthy, vaccinated animals of the bovine species, removed and prepared under aseptic conditions, and made into a smooth emulsion with a glycerin solution.

XANTHOXYLUM.

Latin, Xanthoxylum. Eng., Xanthoxylum. Synonym, Prickly Ash Bark. The dried bark of *Xanthoxylum americanum* or of *Xanthoxylum Clava-Herculis.*

Average Dose.—30 grains (2 Gm.).

Official Preparation.

Fluidextractum Xanthoxyli. Eng., Fluidextract of Xanthoxylum.

Average Dose.—30 minims (2 mils).

Therapeutic Action.—Laxative, diuretic, expectorant.

Uses.—It is a constituent of many pharmaceutical and proprietary preparations that are recommended for syphilis, rheumatism, scrofula, etc. Seldom prescribed.

ZINCUM—Zinc.

Official Salts and Preparations.

General Incompatibles of Zinc Salts.—Acacia, alkalies, arsenates, carbonates, cyanides, phosphates, sulphates, sulphides, lead acetate, lime-water, silver nitrate, tannic acid, milk.

ZINCI ACETAS. Eng., Zinc Acetate.

Form.—White plates.

Odor and Taste.—A faintly acetous odor, and in dilute solutions an astringent, metallic taste.

Solubility.—In 2.3 parts of water or 30 parts of alcohol.

Incompatibles.—See Zincum.

Average Dose.—2 grains (0.125 Gm.).

Therapeutic Action.—Astringent, antiseptic.

Uses.—Its only common use is in the treatment of gonorrhea, when it is prepared by prescribing together zinc sulphate and lead acetate.

ZINCI CARBONAS PRÆCIPITATUS. Eng., Precipitated Zinc Carbonate.

Form.—A white powder.

Odor and Taste.—Odorless and tasteless.

Solubility.—Insoluble in water or alcohol.

Therapeutic Action.—Astringent, absorbent, protective.

Uses.—Sometimes used in the treatment of skin diseases. Not often prescribed.

ZINCI CHLORIDUM. Eng., Zinc Chloride. Formula $ZnCl_2$.

Form.—White or nearly white powder, mass or pencils.

Odor and Taste.—Odorless. The dilute solution has an astringent, metallic taste. Tasting is dangerous except when in very dilute solution.

Solubility.—In 0.25 part of water. Very soluble in alcohol.

Incompatibles.—See Zincum.

Liquor Zinci Chloridi. Eng., Solution of Zinc Chloride. A colorless liquid containing about 50 per cent. by weight of the salt.

Therapeutic Action.—Antiseptic, astringent, escharotic.

Uses.—Sometimes used in the treatment of cancer, indolent ulcers, etc. Not often prescribed.

ZINCI OXIDUM. Eng., Zinc Oxide.
Form.—A white or yellowish-white powder.
Odor and Taste.—Odorless and tasteless.
Solubility.—Insoluble in water or alcohol.

Unguentum Zinci Oxidi. Eng., Ointment of Zinc Oxide. Contains 20 per cent. of the Zinc Oxide in Benzoinated Lard.

Therapeutic Action.—Antiseptic, astringent.

Uses.—Extensively used in dusting powders or ointments in the treatment of various skin lesions, as ulcers, eczema, prickly heat, herpes, etc.

Administration.—A point of value in using Zinc Oxide is its sticking quality when applied to the surface. The following will illustrate the use of the drug:

As a dusting powder in the treatment of hyperidrosis:

℞[1]		or	
Acidi Salicyl. Pulv.	gr. xx	1	3
Acidi Borici Pulv.	ʒj	4	0
Zinci Oxidi Pulv.	ʒiij	12	0

M.
Sig.—Apply as directed.

For prickly heat:

℞		or	
Acidi Salicylici	gr. x		6
Acidi Borici	ʒj	4	0
Zinci Oxidi	ʒiij	12	0
Amyli	ʒj	30	0

M.
Sig.—Apply as directed.

In the treatment of prickly heat:

℞[2]		or	
Acidi Borici, Talci Pur., Zinci Oxidi, Amyli	ää. ʒij		8

M.
Sig.—Apply freely.

[1] Stelwagon: Diseases of the Skin.
[2] *Ibid.*

In the treatment of herpes progenitalis:

℞[1]		or
Zinci Oxidi,		
Calaminæ Præp.	āā. gr. x	65
Glycerini,		
Alcoholis	āā. ♏xij	75
Aquæ	q. s. f℥ij	60|00

M.
Sig.—Apply freely. (Shake-label.)

Used in the treatment of the cutaneous lesions of hereditary syphilis:

℞[2]		or
Hydrargyri Ammoniati	gr. xv	1
Ung. Zinci Oxidi	℥j	30

M.
Sig.—Apply as directed.

In the treatment of dermatitis:

℞[3]		or
Phenolis	gr. xij	8
Bismuthi Subnit.	ʒiss	6|0
Adipis Lanæ Hyd.	ʒij	8|0
Ung. Zinci Oxidi	q. s. ℥j	30|0

M.
Sig.—Apply locally.

ZINCI PHENOLSULPHONAS.—See Phenol, p. 259.

ZINCI STEARAS. Eng., Zinc Stearate.

Form.—A white powder.

Odor and Taste.—A faint odor resembling that of fat. Tasteless.

Solubility.—Insoluble in water or alcohol.

Therapeutic Action.—Astringent, absorbent.

Uses.—Sometimes used in the treatment of various skin lesions. It is employed in dusting powders, ointments, and drying lotions.

ZINCI SULPHAS. Eng., Zinc Sulphate. Synonym, White Precipitate. Formula, $ZnSO_4$.

Form.—Colorless crystals or granular powder.

Odor and Taste.—Odorless, and an astringent, metallic taste.

Solubility.—In 0.6 part of water. Insoluble in alcohol.

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[1] Stelwagon: Diseases of the Skin.
[2] Musser and Kelly: Practical Treatment.
[3] Ashton: Practice of Gynecology.

Incompatibles.—See Zincum.

Average Dose.—Emetic, 15 grains (1 Gm.).

Therapeutic Action.—Astringent, styptic, antiseptic, emetic.

Uses.—Sometimes used in the treatment of conjunctivitis, gonorrhea, vaginitis, etc. Not used as an emetic, as more practical agents are usually available.

Administration.—The following will show how the drug may be prescribed:

In the treatment of gonorrhea:

℞[1]		or
Zinci Sulphatis	gr. xv	1|0
Plumbi Acetatis	gr. xx	1|3
Tincturæ Opii,		
Tincturæ Catechu	āā. f℥ij	8|0
Aquæ	q. s. f℥vj	180|0

M.

Sig.—Inject after urination. (Shake-label.)

ZINCI VALERAS.—See Valerates, p. 318.

The unofficial Phosphide is sometimes employed. It is always given in capsules.

In the treatment of herpes zoster:

℞[2]		or
Zinci Phosphidi,		
Ext. Nucis Vomicæ	āā. gr. x	|65

M. ft. cap. no. xxx.

Sig.—One every three hours.

ZINGIBER.

Latin, Zingiber. Eng., Ginger. Synonyms, Jamaica Ginger, Ginger Root, etc. The dried rhizomes of *Zingiber officinalis.*

Principal Constituents.—Volatile Oil (¾ to 2 per cent.), resin, gingerol.

Average Dose.—15 grains (1 Gm.).

Official Preparations.

Fluidextractum Zingiberis. Eng., Fluidextract of Ginger.

Average Dose.—15 minims (1 mil).

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[1] White and Martin: Genito-urinary and Venereal Diseases.

[2] Hughes: Practice of Medicine.

Oleoresina Zingiberis. Eng., Oleoresin of Ginger.
Average Dose.—½ grain (0.03 Gm.).

Syrupus Zingiberis. Eng., Syrup of Ginger. Represents 3 per cent. of the drug.
Average Dose.—4 fluidrachms (15 mils).

Tinctura Zingiberis. Eng., Tincture of Ginger. Synonyms, Essence of Ginger, Extract of Ginger, Jamaica Ginger, etc.
Average Dose.—30 minims (2 mils).

Tincture of Ginger is contained in Aromatic Sulphuric Acid.

Therapeutic Action.—Stomachic, carminative, anodyne.

Uses.—The preparations of ginger are used in the treatment of acute indigestion, flatulence, intestinal cramps, dysmenorrhea, etc. The tincture is extensively employed as an intoxicant in prohibition districts.

Administration.—The following will illustrate the use of the drug:

In the treatment of stomatitis:

℞[1]		or	
Potassii Chloratis	gr. xxiv		1|5
Tinct. Ferri Chlor.	♏xxxvj		2|5
Syr. Zingiberis	f℥ss		15|0
Aquæ ..... q. s.	f℥iij		90|0

M.
Sig.—Teaspoonful in water every two hours.

In the treatment of flatulence, hysteria, etc.:

℞[2]		or	
Sodii Bicarbonatis	gr. xl		3|
Spir. Ammoniæ Arom.,			
Tinct. Zingiberis ..... āā.	f℥ss		15|
Spir. Ætheris ..... q. s.	f℥ij		60|

M.
Sig.—Two (2) teaspoonfuls in water. Repeat when necessary.

As a flavor, etc., in a prescription for mixed treatment for infantile syphilis:

℞[3]		or	
Hydrarg. Chlor. Corros.	gr. j		|065
Potassii Iodidi	℥ij		8|000
Syr. Zingiberis	f℥j		30|000
Aquæ ..... q. s.	f℥ij		60|000

M.
Sig.—Five (5) drops in milk three times a day.

[1] Ruhrah: Diseases of Children.
[2] Shoemaker: Materia Medica and Therapeutics.
[3] Musser and Kelly: Practical Treatment.

INTRODUCTION TO PART II.

PRESCRIBING is the final expression of a physician's effort in the treatment of disease. Without the ability to intelligently prescribe, pathology, diagnosis, therapeutics, and all else in practice is almost useless. Imagine a capitalist with a fortune in the bank, but unable to write a check; a singer with an exhaustless knowledge of music, but who cannot control the vocal cords, or a sharpshooter who cannot pull the trigger of his rifle, and a picture is obtained of the practitioner who cannot prescribe.

Suppose an expert accountant locates in a city and sends this note to Mr. Smith:

John Smit,
Crescent City, Pelican State.
dear Sir:
Give this slave 5 slugs.
J. W.

Would not the recipient reason that courtesy demanded for him the title of Mr., that the writer should go to the trouble to spell his name correctly, that Crescent City and Pelican State were not the proper names for his town and State, that capitals should be properly used, that the writer should know that slaves are things of the past, that slugs is not the proper name for dollars, and that an order should be better signed? Mr. Smith would hardly employ that accountant should he later need the services of one. Yet prescriptions, open to all these and many more criticisms, are daily sent to our drug-stores and sent by our otherwise able physicians.

The prescription is often the only written evidence of the physician's ability. It should not only be excellent, but it should represent the acme of perfection.

Many of the ideas expressed here are at variance with those of other writers. The only apology offered is the author's conception of the demands of present conditions, based on many years of practical experience behind the prescription case and in the laboratory.

PART II.

Prescription Writing.

METROLOGY.

Metrology is the science of measure. The term was originally used to express the measure of distance, but now is understood to include measures of quantity also.

Weight is the sum of the attraction of gravity existing between the earth and a body on its surface.

The origin of standards for weights and measures is an interesting study. Josephus states that Cain after leaving the neighborhood of Eden introduced among his new neighbors means for weighing and measuring. It might be believed that these were also the first crooked weights and measures.

The origin of some of the familiar units seems decidedly crude. The *grain* from a grain of wheat; the *foot* from the length of the pedal extremity; the *cubit,* the distance from the elbow to the tip of the fingers; the *hand,* the distance from the tip of the abducted thumb to the edge of the ulna side of the hand; the *span,* the distance between the tips of the little finger and the thumb when separated as widely as possible.

There are now in use in the United States several standards with which the physician and pharmacist must be familiar. It should be one of the duties of every member of both professions to lend his influence toward the much desired end, that the metric system alone be used by the entire world.

Table of Avoirdupois Weights.

437.5	grains (gr.)	=	1 ounce (oz.)
16	oz.	=	1 pound (lb)
100	lbs.	=	1 hundredweight (cwt.)
20	cwt.	=	1 ton

This table is never used in prescribing.

These are the weights that are used almost exclusively in buying and selling all solid and many liquid drugs. A physician who orders a "pound" gets an Avoirdupois pound, or 7000 grains.

If he orders an "oz." he receives an Avoirdupois ounce of 437.5 grains, as "oz." stands for the Avoirdupois ounce only. Potent drugs, as strychnine, morphine, etc., are usually handled in ⅛-oz. bottles. It should be remembered that these do not contain ⅛ of an Apothecaries' ounce, or 60 grains, but ⅛ of an Avoirdupois ounce, or about 54.7 grains.

Table of Apothecaries' (or Troy) Weights.

20 grains (gr.)	=	1 scruple (℈)
3 scruples	=	1 drachm (ʒ)
8 drachms	=	1 ounce (℥)
12 ounces	=	1 pound (lb)

It should be remembered that the grain here is the same as the Avoirdupois grain.

The ounce contains 480 grains as against 437.5 of the Avoirdupois.

The pound contains 12 ounces of 480 grains, or 5760 grains instead of the Avoirdupois pound of 16 oz. of 437.5 grains each, or 7000 grains.

Of this table only the grains, drachms, and ounces should be used in prescription writing. The scruple is still sometimes employed, but its use should be discouraged, as it is altogether unnecessary, and the character when carelessly made or blurred is too easily mistaken for the character for the drachm.

Table of Apothecaries' (or Wine) Measure.

60 minims (♏)	=	1 fluidrachm (fʒ)
8 fluidrachms	=	1 fluidounce (f℥)
16 fluidounces	=	1 pint (O)
8 pints	=	1 gallon (Cong.)

Some points to remember are:

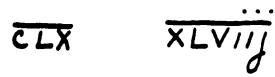
The character ʒ represents 60 grains, while fʒ represents 60 minims. ℥ represents 480 grains only, while f℥ is necessary to express 480 minims.

A minim is not the equivalent of a grain. 480 minims (1 f℥) of water weighed at the standard temperature weighs 456.37 grains. This should be remembered for percentage solutions.

Specific gravities of liquids vary; a pint of a liquid is not necessarily a pound.

Two pints make 1 quart and 4 quarts make 1 gallon, but the employment of the quart is hardly considered good form in medicine and pharmacy.

In prescriptions where Apothecaries' weights and measures are employed, quantities are expressed in Roman numerals. In printed matter the small letters are used, while in writing it is necessary to sacrifice grammatical exactness on the altar of caution to the extent of using a capital L as the small letter might be too easily mistaken for an i. It is customary to make the letters harmonize in size, as:



It is also customary to draw a line over the letter or group of letters expressing the quantity, and the greatest care should be used in *printing* them. The numerals *i* and *j* should be dotted, but under no circumstances should the others be dotted, as in a hastily written or blurred prescription the pharmacist often depends on the dots to differentiate an indistinct *i* from an *l* or a comma or period, or a *j* from an imperfectly formed *v*, as in the following:

They should also not be written together as:

Final *i* is made *j* as an additional safeguard (see above). When poorly written or when an imperfect effort is made to follow the numerals with a comma or period, there is more danger of confusing an *i* than a *j* with a punctuation mark. The *j* means the last numeral in that quantity, and any mark following it is understood to be an accident, artefact or punctuation.

Table of Approximate Measures.

1 teaspoonful	=	1 f℥
1 dessertspoonful	=	2 f℥
1 tablespoonful	=	4 f℥
1 wineglassful	=	2 f℥
1 cupful	=	4 f℥
1 glassful	=	8 f℥

It should be remembered that these equivalents are far from correct. It is not unusual to see teaspoonfuls measured that really amount to anywhere from 30 to 120 minims. It is always the better policy to have a family use a graduated glass, which will either be supplied free by the pharmacist as an advertisement or can be purchased at a nominal price.

When regular spoons, glasses, etc., are used, the physician on his first visit should select the ones that are best suited and have them set aside for the particular use.

The so-called "glassful" varies from 6 to 14 ounces. There may be much difference between a tablespoonful of brandy and one of codliver oil, or a glassful of purgative water and one of beer. With the expenditure of a small amount of effort any prescriber can so familiarize himself with spoons and glasses as to readily estimate their capacity.

METRIC SYSTEM.

The Metric system of weights and measures is a decimal system and possesses as many or more advantages over the common standards as does our money system over that of Great Britain. A great advance will have been made when it is established as the only system for this country as it now is for many others.

The idea of the Metric system seems to have originated with the statesman Talleyrand of France, about the year 1790. A committee of scientists appointed to select a definite unit decided upon $\frac{1}{40000000}$ of the earth's circumference around the poles or, as it is often referred to, $\frac{1}{10000000}$ of a quadrant of the earth's meridian, which is the distance from the equator to the pole. This unit was called a Meter and measures about 39.37 inches.

Bars of metal measuring a Meter so constructed as to be the least affected by temperature were made and sent to other civilized nations.

It is now claimed that the scientists in calculating this distance made a slight error, but their standard has remained unchanged.

Metric weights and measures were made legal in France in 1801 and were made compulsory in 1840. They were made legal, but not compulsory, in England in 1864, and in the United States in 1866.

In the present state of things it is not recommended that any but the exceptional use be made of the Metric quantities in writing prescriptions. All drug-stores are equipped with Apothecaries' weights and measures, while many do not have the Metric; and where the pharmacist has to transpose the quantities and fill the Metric pre-

scription by the Apothecaries' table, there is too great a possibility for error. The druggist with few exceptions has learned dosage in the old quantities and is more apt to let an error slip through in checking up a Metric prescription. The compounder may from a lack of familiarity be more apt to make an error in selecting a weight. If he should through error select a drachm instead of a scruple weight for—say calomel—having the scruple weight and the corresponding quantity of calomel in mind, instinct would tell him the quantity weighed was too much. This would only obtain in the use of standards with which he was intensely familiar. Some of these reasons may seem far-fetched, but almost any pharmacist of general experience will be reminded of many incidents in his past. The Metric system should be made compulsory by the federal government, but until that time, and paving the way for that event, it should be thoroughly taught in not only the professional but all schools. It might be practicable for the medical and pharmaceutical societies to arrange for the exclusive adoption (after a reasonable interval) of the system by both professions.

The unit of the Metric system is the Meter—39.37 inches, or about three feet three inches and three-eights of an inch.

The unit of the measure of bulk is the Liter. A vessel that is one-tenth of a Meter (a decimeter) in each of its dimensions will hold a Liter.

The unit of weight is the Gramme, which is the weight of one cubic centimeter (the cube of one-hundredth of a Meter) of water at 4° Centigrade (39.2° F.).

Greater or less quantities are designated by adding prefixes to the particular unit. These prefixes are either Latin or Greek words for 10, 100, 1000, and 10,000. The Latin prefixes are: deci (ten), centi (hundred), and milli (thousand). The Greek prefixes are: Deka (ten), Hecto (hundred), Kilo (thousand), and Myria (ten thousand).

The Latin prefix to a unit means that the unit is divided by that amount, as decimeter means $\frac{1}{10}$ of a Meter, centigramme means $\frac{1}{100}$ of a Gramme. The Greek prefix to a unit means that the unit is multiplied by that amount, as Dekameter for ten Meters or a Hectogramme for a hundred Grammes.

To aid the student in remembering which prefix increases and which decreases, the word "g i l d" has been suggested as follows:

G	I	L	D
Greek	increases	Latin	decreases.

As a precaution against mistakes the Latin prefixes are written with a small letter and the Greek with a capital, as deci and Deka.

Changes in the spelling of the original languages have been made where it was thought advisable, as changing the original Greek Deca to Deka to prevent its being mistaken for the Latin deci.

The correct pronunciation of these words should be remembered. Meter is pronounced *Me-ter,* the *me* having the same sound as the personal pronoun *me.* Liter is pronounced *Le-ter,* the *le* having the same accent as the *me* in meter. Gramme is pronounced *Gram,* having the same accent as *dram, sham,* etc. Centi is pronounced *Sen-ti.*

In this country the simplest English pronunciation is employed. The most frequent errors are made in using the words *Meter, Liter, Gramme,* and *Centi.*

Only a few of the many Metric terms are commonly used. In measures of distance the Kilometer (about ⅔ of a mile), the Meter (a little more than a yard), the centimeter (about ⅖ of an inch) and the millimeter (about $\frac{1}{25}$ inch).

In weights the Kilogramme is used in commerce and is usually simply referred to as a Kilo. The Gramme and fractions of a Gramme and the milligramme are employed.

In measures of quantity the Liter and the milliliter and the fractions of them are used.

Previous to the ninth revision of the U. S. P., the cubic centimeter was used instead of the present mil (milliliter). This change was made on account of greater accuracy and convenience, and to secure uniformity between the two pharmacopœias in the English language.

In reading in our money system an item like $25.75 we would not say two eagles, five dollars, seven dimes and five cents, but twenty-five and three-fourths dollars or twenty-five dollars and seventy-five cents. So in the Metric system in reading—say, 25.75 Grammes—we would say twenty-five and three-fourths Grammes, or twenty-five and seventy-five hundredths Grammes, or twenty-five Grammes and seventy-five centigrammes.

In prescription writing we use only two units—Grammes and milliliters, abbreviated Gm. and mil.

If the quantity is in mils, it is read as mils and fractions of a mil.

If a part of a Gramme is not read as a fraction it is read in round numbers of the largest denomination that applies,—as 0.375

Gramme may be read as three hundred and seventy-five milligrammes.

A bookkeeper in entering a charge does not use the dollar mark or write the word dollar or cents, but all on the left-hand side of a certain line or decimal point is understood to be dollars and all on the right-hand side to be fractions of a dollar.

In writing a prescription it is not customary to write the words Gramme or milliliter or their abbreviations, but as these are the only units used, if the drug is a solid the figures are understood to be for Grammes and fractions of a Gramme, unless specified to the contrary, and if the drug is liquid the figures stand for mils and fractions of a mil, unless otherwise specified. Arabic numerals are used.

It is certainly desirable that all prescription blanks for Metric prescriptions have a line near the right-hand margin for use instead of the prescriber having to employ decimal points which are so frequently not in line, vertically, and if imperfectly made may be mistaken or may be obliterated by the wear and tear of being carried in the pocket or being handled on the files of the druggist. It is acknowledged that this is not the general custom in those countries where the system is exclusively used, but it seems desirable and is also rather the custom here. The following illustrates the Metric inscription:

Sodii Bromidi	5
Elix. Aromatici .....q. s.	30

This would represent 5 *grammes* of sodium bromide and 30 mils of aromatic elixir.

It is not written

Sodii Bromidi	Gm. 5
Elix. Aromatici	mil. 30

Or:

	Gm. or mil.
Sodii Bromidi	5
Elix. Aromatici	30

Or:

Sodii Bromidi	v
Elix. Aromatici	xxx

Or:

Sodii Bromidi	5.
Elix. Aromatici	30.

If for any reason it is desired to have the liquid by weight or the solid by measure, then specify, as

Acidi Hydrochlorici	Gm. 10|00
Aquæ	Gm. 21|19

The prescriber can almost without exception follow the regular custom by taking into consideration the specific gravity and prescribing more or less bulk should he think a definite weight of a liquid necessary. For example: should he wish about 30 Gm. of glycerin he can prescribe 24 mils, which, instead of

Glycerini	Gm. 30|

would be written

Glycerini	24|

There seems to be no fixed rule as to the use of ciphers on the right of the decimal line. The custom of bookkeepers in making out statements, etc., is a good one for the sake of appearance. Where fractions occur in one or more items the ciphers are used for the others, as

Hydrarg. Chlor. Mitis	|25
Sacchari Lactis	1|00

Or:

Strychninæ Sulph.	|065
Arseni Trioxidi	|065
Ferri Reducti	4|000
Quininæ Sulph.	4|000

It should be particularly noted that Arabic numerals are used. The Roman numerals are never employed in a Metric inscription.

Prescriptions may be readily transposed from one system to the other by remembering only two essential equivalents.

1 Gm. = 15.432 grains
1 mil = 16.23 minims.

For average work these may be used approximately as

1 Gm. = 15.5 grains
1 mil = 16 minims.

Rules.—To transpose Metric weights to Apothecaries' weights multiply the number of Grammes by 15.432 (or 15.5) to find the number of grains. To transpose Apothecaries' weights to Metric weights, divide the number of grains by 15.432 (or 15.5) to find the number of Grammes. To transpose Metric measures to Apothecaries' measures, multiply the number of mils by 16.23 (or 16) to find the number of minims. To transpose Apothecaries' measures to

Metric measures, divide the number of minims by 16.23 (or 16) to find the number of mils.

It is convenient to also remember the following two approximate equivalents.

1 fluidounce = 30 mils.
1 grain = 0.065 Gm. (65 milligrammes).

MEDICAL LATIN.

The use of the Latin names of drugs in prescription writing seems to be still far from universal adoption. Some teachers, even in the larger medical colleges, openly advise against it. Some of the older practitioners claim that they have not time to learn it, but the general trend is certainly toward its general employment, at least by the better element of the profession.

If Latin could be discarded by all physicians, dentists, and pharmacists it would be in order to discuss the advantage and disadvantages of its use, but such concert of action is hardly to be hoped for at this time. The Metric system has been adopted in this country for fifty years. Its advantages are unquestioned, yet how far it is from universal employment. The individual is not so much concerned with the question of the general use of Medical Latin as with the proposition—Must he learn it?

The particular school must face the proposition only—Must they teach it?

The following facts should be considered:

Nearly all medical books having the drugs arranged alphabetically, have them arranged according to their Latin names. For example, the U. S. Pharmacopœia, U. S. Dispensatory, National Dispensatory, National Formulary, Useful Remedies (A. M. A.) and practically all Materia Medicas. Not knowing the Latin name it would be rather difficult to even locate a drug. Over 90 per cent. of the prescriptions in medical books are in Latin. For example, Anders, Ashton, Musser and Kelley, Keen, Gilliam, Stelwagon, Ruhrah, and most others. Without a knowledge of Medical Latin much of this would be valueless to the reader.

The vast majority of prescriptions in current medical literature are in Latin; even those in the Department of Therapeutics of the Journal of the A. M. A.

Excluding those calling for proprietary medicines, between 80 and 90 per cent. of prescriptions sent to drug-stores today are in

Latin. It might, at least, be rather embarrassing to meet other medical men in consultation.

As long as some use it, all must be familiar with it.

The pharmacist is taught Medical Latin. He regards it as the language of prescribing, and he certainly is favorably impressed by its proper use, and impressing the pharmacist is not to be overlooked.

The laity know that it is the usual language for prescribing, and far from resenting its use (as often claimed), they regard it as rather a hallmark of excellence.

Nearly all students (about 99 per cent.), on entering a medical college, have studied Latin. The matter to be learned has been greatly magnified, as an hour's study is all that is necessary to master 95 per cent. of the subject and enable a student totally ignorant of the language to correctly give the Latin names of 95 per cent. of all drugs.

Most Latin names of drugs are Latinized English; therefore either the whole name or the root is the same.

The English name of the drug has been made the Latin name, unless there is some reason to the contrary. When the words are the same except the terminations (as in alkaloids) definite rules apply, and a few simple rules cover the entire field.

The language of a modern prescription (in this country) is as follows:

Printed heading, date, name of patient, etc.—English.

Names of Drugs.—Latin.

Directions to Druggist.—Latin abbreviations.

Directions for Patient.—English.

The Latin for the directions to the druggist consists of a few abbreviations that are as well known as Mr., Dr., N. Y., La., etc., are to a postmaster. Terminations are never used.

Therefore all the Latin necessary is the names of the drugs and the way they should appear on a prescription (Genitive case). This is enormously reduced by the use of abbreviations; for example, the class names as *tincture, spirit,* etc., and adjectives as *compound, exsiccated,* etc., are almost always abbreviated (Tinct. Gentianæ Co.).

An analysis of English prescriptions shows almost as much poor construction as the Latin ones, and the student can probably learn to write one correctly as easily as the other. For example, we

usually see Tinct. Gentian Co., when in English the adjective should be placed first. The employment of meaningless or undesirable synonyms is also only too common.

While a thorough knowledge of Latin is certainly desirable, it is not essential to correct prescription writing. The average Latin scholar, in taking up the study of this subject, has almost as much to learn as the one less fortunate. He should grasp it, however, with greater facility.

Leaving out the matter of declension and all else not absolutely necessary, the effort is made to give the reader all the essentials in a few paragraphs arranged on the supposition that he has no knowledge whatever of Latin.

An official Latin name is in the nominative case. The names of the drugs in a prescription are in the genitive case, as the prescription really is an order to the druggist; therefore, the following,

℞
Quininæ Sulphatis 3j
Ft. cap. xij.

would read:

"Take thou
Of the Sulphate of Quinine, one drachm.
Make twelve capsules."

In Latin the word *of* is not written, but the termination of the word to which it belongs is arranged to express it, as *Quinina* means *quinine* while *quininæ* means *of quinine.*

The whole matter then resolves itself into knowing the Latin official names of drugs and knowing the change of termination that is necessary when ordering in a prescription.

Rules, Groups, and Exceptions.

Nouns that in the nominative end in *a* will in the genitive usually end in *æ,* as Quinina (nom.), Quininæ (gen.).

Nouns with the nominative ending *ma* in the genitive add *tis,* as Physostigma (nom.), Physostigmatis (gen.).

Nouns that in the nominative end in *us, um,* or *on,* will in the genitive usually end in *i,* as Syrupus (nom.), Syrupi (gen.); Aconitum (nom.), Aconiti (gen.); Erythroxylon (nom.), Erythroxyli (gen.).

Nouns that in the nominative end in *l* in the genitive usually add

is, as Menthol (nom.), Mentholis (gen.). In the case of these nouns the Latin and English name is usually the same, as Alcohol, Thymol, Menthol, etc.

Some add *lis,* as Mel (nom.), Mellis (gen.).

Nouns that in the nominative end in *x* in the genitive end in *cis,* as Nux (nom.), Nucis (gen.).

Nouns that in the nominative end in *go* in the genitive usually change the *o* to *inis,* as Mucilago (nom.), Mucilaginis (gen.).

Other nouns with a nominative ending in *o* in the genitive add *nis,* as Carbo (nom.), Carbonis (gen.); Sapo (nom.), Saponis (gen.); Decoctio (nom.), Decoctionis (gen.).

Some nouns with the nominative ending *is* in the genitive change the *is* to *itis,* as Phosphis (nom.), Phosphitis (gen.).

Others change the *is* to *idis,* as Cantharis (nom.), Cantharidis (gen.).

Others do not change in the genitive, as Digitalis (nom.), Digitalis (gen.).

Some nouns are indeclinable, as Buchu (nom.), Buchu (gen.).

The following group represents the vast majority of the needs of the prescriber:

All metals have the nominative ending *um* and the genitive *i,* as Sodium (nom.), Sodii (gen.). The Latin and English names of metals is usually the same, as Potassium, Sodium, Calcium, Lithium, etc.

All alkaloids have the nominative ending *a* and the genitive *æ,* as Morphina (nom.), Morphinæ (gen.). The Latin and English names are the same except the terminations. The English name ends in *ine.* The Latin name is formed by changing the final *e* to *a.* The genitive (prescription) is formed by changing the final *a* to *æ.* Morphine, Morphina, Morphinæ.

All glucosides and neutral principles have the nominative ending *um* and the genitive *i,* as Strophanthinum (nom.), Strophanthini (gen.). The Latin and English names are the same except the terminations. The English name ends in *in.* The Latin is formed by adding *um.* The genitive (prescription) is formed by changing the *um* to *i.* Strophanthin, Strophanthinum, Strophanthini.

All parts of all names of acids have the nominative ending *um* and the genitive *i,* as Acidum Hydrochloricum Dilutum (nom.), Acidi Hydrochlorici Diluti (gen.). The exception is the word *Glaciale* in Acidum Aceticum Glaciale. The Latin and English names are the same except the terminations.

In forming the Latin names of the acid radicals in salts the root is always the same.

If the English ends in *ate* (Sulphate) the Latin nominative ends in *as* (Sulphas), and the genitive (prescription) ends in *atis* (Sulphatis).

If the English ends in *ite* (Sulphite) the Latin nominative ends in *is* (Sulphis), and the genitive (prescription) ends in *itis* (Sulphitis).

If the English ends in *ide* (Bromide) the Latin nominative is formed by changing the final *e* to *um* (Bromidum), and the genitive (prescription) by changing the *um* to *i* (Bromidi).

Some exceptions to the rules given for forming the genitive, that are of interest to the prescriber, are:

Nom.	*Gen.*
Aloe	Aloes
Catechu	Catechu
Folia	Foliorum
Fructus	Fructus
Indigo	Indigo
Kino	Kino
Rhus	Rhois
Sassafras	Sassafras
Sumbul	Sumbul

It will be remembered that the class name of a preparation is usually abbreviated; so the following are not to be memorized, but are given as a matter of interest. It will be noted that the word root is usually the same in Latin and English, so it is usually only necessary to abbreviate the English names to have correct Latin.

The following *classes* of preparations have the nominative *a* and the genitive *æ:*

Nom.	*Eng.*	*Gen.*	*Abbrev.*
Aqua	(water)	Aquæ	
Massa	(mass)	Massæ	Mas.
Mistura	(mixture)	Misturæ	Mist.
Oleoresina	(oleoresin)	Oleoresinæ	Oleores.
Resina	(resin)	Resinæ	Res.
Suppositoria	(suppository)	Suppositoriæ	Suppos.
Tinctura	(tincture)	Tincturæ	Tinct.

The following have the nominative ending *um* and the genitive *i*:

Nom.	*Eng.*	*Gen.*	*Abbrev.*
Acetum	(vinegar)	Aceti	Acet.
Balsamum	(balsam)	Balsami	Bals.
Ceratum	(cerate)	Cerati	Cer.
Collodium	(collodion)	Collodii	Collod.
Emplastrum	(plaster)	Emplastri	Emp.
Emulsum	(emulsion)	Emulsi	Emul.
Extractum	(extract)	Extracti	Ext.
Fluidextractum	(fluidextract)	Fluidextracti	Flext.
Glyceritum	(glycerite)	Glyceriti	Glyc.
Infusum	(infusion)	Infusi	Inf.
Linimentum	(liniment)	Linimenti	Lin.
Oleatum	(oleate)	Oleati	
Oleum	(oil)	Olei	
Unguentum	(ointment)	Unguenti	Ung.
Vinum	(wine)	Vini	

The following have the nominative and genitive as indicated:

Nom.	*Eng.*	*Gen.*	*Abbrev.*
Confectio	(confection)	Confectionis	Confec.
Mucilago	(mucilage)	Mucilaginis	Mucil.
Elixir	(elixir)	Elixiris	Elix.
Liquor	(solution)	Liquoris	Liq.
Mel	(honey)	Mellis	Mel.
Pilulæ	(pills)	Pilularum	Pil.
Pulver	(powder)	Pulveris	Pulv.
Spiritus	(spirit)	Spiritus	Spir.
Syrupus	(syrup)	Syrupi	Syr.
Trochisci	(troches)	Trochiscorum	Troch.

The adjective agrees with the noun it modifies in number, gender, and case, as Compound Tincture of Cinchona—**Tinctura** Cinchonæ **Composita.** Compound Syrup of Squills—**Syrupus** Scillæ **Compositus.** Tincture of Deodorized Opium—**Tinctura** Opii **Deodorati.**

The following is a list of some of the common adjectives.

They are always abbreviated, so it is suggested that a study of terminations is not necessary.

It will be noted that usually the abbreviation of the English is also correct Latin. They are given as they appear in the names of official drugs:

Latin	*Eng.*	*Abbrev.*
Amara	Bitter	Amar.
Composita-us	Compound	Comp. (Co.)
Deodoratum	Deodorized	Deod.
Dilutum	Dilute	Dil.
Dulcis	Sweet	Dulc.
Exsiccatus	Exsiccated (dried)	Exsic.
Flavum	Yellow	Flav.
Liquefactum	Liquefied	Liq.
Purificatum	Purified	Purif.
Rubrum	Red	Rub.

Construction of Official Names.

In the names of salts the first word is the name of the base, next the acid radical, next the qualifying adjective if there is one, as:

Ferri	Sulphas	Exsiccatus
(base)	(acid radical)	(adjective)

This would read: (The) exsiccated sulphate of iron; so *exsiccated* and *sulphate* are in the nominative, while *of iron* is expressed by using the genitive ending. Therefore: The official name of a salt has first the name of the base, which is in the genitive; next the acid radical in the nominative; next the qualifying adjective, if there is one, in the nominative.

In the names of preparations of drugs the class to which it belongs comes first, as tinctura, syrupus, etc. The name of the particular ingredient comes next, as Squill in Syrupus Scillæ. The qualifying adjective, if there is one, comes last, as *compound* in the Compound Syrup of Squills, Syrupus Scillæ Compositus.

The above would read: (the) compound syrup of squills; so *compound* and *syrup* are in the nominative case, while *of squills* is expressed by the genitive, Scillæ. Therefore:

In the official names of preparations the name of the class is first and in the nominative case; next is the name of the particular drug and it is in the genitive; next is the qualifying adjective, if there is one, in the nominative.

The names of some drugs contain more than one word, when, of course, both words are in the genitive, as Tinctura Belladonnæ Foliorum, Liquor Potassii Arsenitis, etc.

In prescriptions all parts of names are in the genitive.

In the prescription

℞
Tincturæ Opii ..... f℥j

the druggist is told to

Take thou
of (the) Tincture of Opium one fluidounce.

So that the words *Tinctura* and *Opium* must both be put in the Latin genitive case to express the proper meaning.

The prescriber should remember the suggestion that a good abbreviation is better than a bad termination; so, when in doubt, abbreviate. *Spir.* is better than *Spiritæ.*

ABBREVIATIONS.

While the pharmacist must be familiar with all abbreviations that may be used in prescription writing, it is only necessary in a work of this character to call attention to those that it may be to a prescriber's advantage to use.

℞, as will be explained, means *Take thou* or *Take thou of.* The symbol is also frequently used to represent *prescription.* For instance, it is customary to order *Refill* ℞ *47,283.* Some druggists use, in charging and billing, the symbol *Rf.* for *prescription refilled,* as *Rf. 47,283* would mean that particular prescription refilled.

āā. means *of each,* and when placed after an item in the inscription means that the amount following is to be taken of that and each of the ingredients above since a quantity was stated. It should be placed immediately after and on a line with the last item it is to include, as

Codeinæ Phosphatis .....:..... gr. iv
Potassii Citratis,
Sodii Bromidi .....:.....āā gr. clx

q. s. means *a sufficient quantity.* It is usually understood to mean *a sufficient quantity to make up to. ad,* meaning *to* or *up to,* is generally considered unnecessary when placed after q. s., as *q. s. ad. q. s.* is placed after the vehicle or excipient, which are ordinarily the last items in the inscription:

Sodii Bromidi ..... ℥ij
Elix. Aromatici .....q. s. f℥j

The abbreviation *q. s.* is also used where the quantity is left to the discretion of the compounder, as in ordering suppositories the prescriber may write:

Extracti Opii ..... gr. ij
Olei Theobromatis ..... q. s.
Ft. suppos. no. iv.

Or, in abating the unpleasant odor of ichthyol:

Ichthyolis ..... ℥ij
Ol. Citronellæ ..... q. s.
Petrolati ..... ℥vj

ad means *to* or *up to,* and is used after the name of the vehicle. It orders that the agent preceding it should be used in such amount as is necessary to make up to the quantity following, as

℞
Potassii Iodidi ..... ℥j
Aquæ .....ad f℥j

When literally translated into English, *q. s. ad* or even *ad* may be as good or better than *q. s.* The principal objection to *ad* is that it may be mistaken by some for *add,* and in the prescription just given a fluidounce be used instead of about half of that quantity.

ad may also be written so as to read *āā,* while *q. s.* cannot be mistaken for anything else. It is understood by all druggists, it is easily written, and it is the abbreviation used for that particular purpose in such a vast majority of instances that its exclusive use would seem desirable.

Opt.—optimus—*best* is used when an excellent quality is desired, and the particular brand is left to the discretion of the pharmacist, as in ordering olive oil or brandy. It is manifestly unreasonable to expect the dispenser to carry all the first-class makes or to expect all to agree as to which is the best, and in such instances to specify a special make may cause delay or other undesirable results:

Spir. Vini Gallici, Opt. ..... f℥vj.

Q. R.—quantitum rectum—*the quantity is correct.* This may be used where the quantity of a medicine is unusual and it is desirable to call the attention of the dispenser to the fact that the prescriber is aware of the condition, but that particular circumstances justify the dose. The abbreviation is placed just after the item to which it calls attention, as

Morphinæ Sulphatis ..... gr. iv Q. R.

If the entire prescription is unusual in dosage the *Q. R.* may be placed in the lower left-hand corner of the sheet, in which case it should be written in bold letters so as not to escape attention.

The druggist is required to observe the dosage in a prescription and not fill any that appears excessive unless he is assured of its correctness. He stands between the prescriber and the patient as a safeguard against toxic quantities, and the prescriber's special assurance is often necessary to prevent delay in delivering.

There is danger of arousing the suspicions of the patient or entailing inconvenience while the prescriber is being sought to change what is really a correct quantity. As an example of this might be mentioned the use of morphine where the patient has acquired tolerance, or in the new application of remedies as thymol in uncinariasis, where the former dose was two grains, but as much as fifty to one hundred grains are now prescribed. Much inconvenience was occasioned when the profession first resorted to this application of this drug.

Underscoring.—A heavy line under a quantity has the same meaning as *Q. R.* and is usually more desirable. It is used as

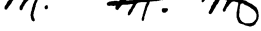
Morphinæ Sulphatis ..... gr. iv

The same method is also used to call attention to a particular word or part of a word, as

Acidi Sulphurosi,

where it is thought the sulphuric acid might be used.

M.—misce—*mix* or *mix thou*—is usually written



It instructs the compounder to mix the items enumerated above, and is understood to mean that it be done in an intelligent manner. In the majority of instances it is all the compounding instructions necessary. The subject is more fully discussed elsewhere.

Ft.—fiat—(plural fiant)—*make*—means that the drug or drugs of the inscription are to be made into the form specified. The same abbreviation is used to express the singular or plural.

Fac.—*Make*—is not often employed.

Chart. (or cht.)—chartula—*a small paper.* It is used to mean a dose of medicine wrapped up in a small paper. The same abbreviation is used to express any number or case of the word. *Chts.* should never be used.

Chart. cerat.—Chartula cerata—*a small waxed paper.* Used to mean a dose of medicine wrapped in a small waxed paper. The same abbreviation is used for any number or case.

Cap.—Capsula—*a capsule.* It is used to mean a dose of medicine put into a capsule. The same abbreviation is used to express any number or case of the word. *Caps.* should never be used.

Pil.—pilula—*a pill.* The same abbreviation is used to express any number or case. *Pill* and *pils* are not correct abbreviations.

Suppos.—suppositoria—*a suppository.* The same abbreviation is used to express any number or case of the word.

Non. rep.—non repetatur—*not to be repeated* (*or refilled*). This is usually placed in the lower left-hand corner of a prescription that the prescriber does not wish the compounder to refill.

Pp.—Pauperismus—*a pauper.* Used in the lower left-hand corner of a prescription, and is understood to mean that the patient is an object of charity, that the prescriber is rendering his services without charge, and that leniency is asked at the hands of the compounder.

The following are frequently employed and hardly need discussions:

Sol.—Solutio—*a solution.*

Emul.—Emulsio—*an emulsion.*

No.—numerus—*number.*

Tere bene—*rub well.*

Sig.—signa—*write* (or *write thou*).

A table of abbreviations will be found elsewhere.

DEFINITION.

The word *prescription* comes from the Latin *pre* and *scribo,* and means literally *written before* or *that which is written before the application of the treatment.* In its broadest sense it includes any instructions for the benefit of the patient. It is customary to speak of prescribing forced diet for one patient, of prescribing exercise for another, or the seashore or the mountains.

In its restricted meaning, as it will be employed in this work, a prescription is a written order from a doctor to a druggist for medicine for a patient. A layman may send a druggist a written order for a bottle of Compound Syrup of Pine; that would not be considered a prescription. A physician may send a nurse a written order to give the patient a dose of salts; that would not be a prescription. A physician may send a written order to a druggist to pay a patient a dollar on his account; not a prescription. A physician may send a druggist a written order for a pound of chloroform for his obstetrical case; not a prescription, as it is generally understood.

HISTORY.

The history of prescription writing is almost as old as the history of man. Among the most ancient inscriptions now being deciphered are found formulæ for preparing medicines. Some of these show that even at the remotest times there was some knowledge of Materia Medica, that this knowledge was employed by some (physicians) in writing instructions (prescriptions) for the preparation of remedies, and there is a reason to suppose that these instructions were executed by others (pharmacists).

The old Greek legend of Æsculapius, the God of the Healing Art, associates with him the beautiful Hygeia, who seems to have played the part of druggist. It is known that the priests attached to the temples of these Gods were of two classes, one that visited the sick and the other who remained in the temple and prepared the remedies.

The relative duties of the physicians and apothecaries have varied throughout the different periods of the world's history, but there seems to have been at all times a class who, among other duties, wrote prescriptions, and a class at least a part of whose duty was to fill them.

The prescription and the treatment of disease have, in the progress of time, gone through many evolutions. Treatment beginning among our Aryan ancestors as songs, dances, and various incantations, it was early learned that certain agents, if associated with the other efforts to drive out evil spirits, tended to produce the desired effect, and medicine soon became a partner to religious effort.

At some times prescriptions largely took the form of love philters, conjure portions, and like expressions of superstition; but among the fanciful and oft revolting list of ingredients there usually appeared some articles of therapeutic merit.

If the statements may be accepted that modern Chinese prescriptions are true children of those of our ancestors thousands of years ago, the truth is shown that the intervening centuries have merely devolved and improved what was already an art when the human race first began to write history.

PARTS OF A PRESCRIPTION.

A prescription should consist of the following seven parts:

Date.

Name of the patient and information as to age.

Superscription, or heading.

Inscription, or main body of the prescription.
Subscription, or directions to the compounder.
Signatura, or directions for the patient.
Prescriber's name.

A prescription is frequently divided into the superscription, including all above the list of ingredients; the inscription, including the ingredients and their amounts; the subscription, including all below this, as directions to compounder, directions for patient, and prescriber's name.

A desirable but not essential part of a prescription is a printed heading, giving the prescriber's name, address, registry number, and other data of interest to the patient and pharmacist.

DATE.

There is some difference of opinion as to whether or not the prescription should be dated by the prescriber, as the compounder must always enter, along with the number and price charged, the date on which the prescription was filled.

The present Federal Narcotic Law requires the date on prescriptions effected, and the habit of dating all prescriptions is certainly desirable.

If a physician retains a carbon copy the date is valuable datum, and it might be of some advantage on the original in case of legal complications. A good argument for the custom is that the prescription is a regular order and all orders should bear a date. If the date is placed where it will not interfere with the space required by the compounder, there can be no argument against it. The pharmacist generally uses the lower left-hand corner for entering the number, date, etc.; so the physician should place his date at the upper part of the sheet to avoid any possible confusion. The best place is immediately after the name of the city, which should always be at the top of the blank with the physician's name, office address, etc. (See page 384.)

NAME OF PATIENT.

Information as to the name and age of the patient should appear on every prescription. The best place for this is at the upper part of the sheet, just under the physician's card and the date (see page 384). Among the reasons for giving the name and age of the patient are the following:

The pharmacist stands as a safeguard between physician and patient to prevent error in dosage. He is often helpless unless he

has some idea as to whether the patient is an adult or child and, if a child, how old. If an overdose is prescribed and is dispensed by the compounder, he comes in for a share of the public condemnation, no matter what the circumstances; so, bare justice to the pharmacist demands that he have all necessary information not only for the patient's protection, but for his own. Few drug-stores use the check system, and if they do a customer's check is often lost; so medicines are usually delivered without protection against confusion unless the name of the patient is given. The author, when a pharmacist, had this lesson impressed upon him by the following incident: Two parties left prescriptions, one for a poison to be used as an insecticide, the other for a tonic for a tuberculous patient. Both prescriptions were to be used "as directed." No name was on either and the insecticide was delivered to the patient for whom the tonic was intended, and the error was not discovered until the package was well on its way to a country home many miles from town. Fortunately, a wild ride on a fast horse prevented possible trouble and a lesson for future use was forcibly impressed.

The name of the patient is necessary on the prescription so that the compounder may put it on the label of the package for identification in the home. Mrs. X and her infant daughter may both be under treatment. They may both be taking 2-ounce mixtures of similar appearance. A dose of the child's medicine may not injure the mother, but a dose of hers might prove fatal to the child.

The prescriber should see that the patient's name is always entered on the label. A physician was recently treating six cases of sickness at one time in the same family. The ages of the patients ranged from one to forty years. It was necessary to give several prescriptions, and on investigation he found the nurse in confusion, as the names of the patients were not on any of the packages. The whole had to be discarded and new medicine ordered.

The convenience of the pharmacist must be considered, and the patient's name on each prescription is a great aid to him in charging his work, identifying the prescription for refilling, and in many other ways.

The name of the patient on the carbon copy retained by the prescriber is of convenience to him in charging his day's work, and is indispensable in filing and keeping his case records.

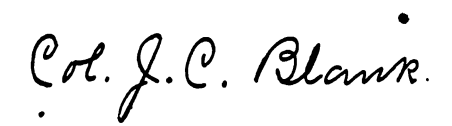
The present Federal Narcotic Law requires the name of the patient on all prescriptions affected. It also requires the patient's address, and the address should be given on all prescriptions, unless

the prescriber knows the patient to be well known to the pharmacist or the prescription is to be delivered and the medicine received by the patient or someone acting for him.

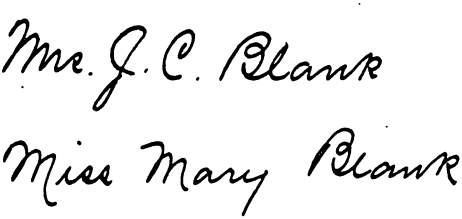
The name of the patient should be the most carefully written part of the whole prescription. If the prescription is left with the patient or family, they usually try to read it and often the patient's name is the only part intelligible to them. If there is an error in the only part that they can read they have some ground for supposing that there may be errors elsewhere; or, if that part is clumsily written, they cannot be expected to have too much respect for the rest. The patient may well reason: "If I cannot read my own name, how can the druggist read the rest?" The experienced druggist can usually decipher the names of the drugs, the amounts, and the directions from his knowledge of medical usages, but unless a patient's name is a common one or familiar to him, there is no scheme for deciphering it unless each letter is plainly formed. A label carrying a patient's name improperly transcribed is well calculated to dissipate confidence in the contents of the package.

If the patient is a male adult the name should be written, as:

or John Blank (adult); or, a specific title may be given; for example,



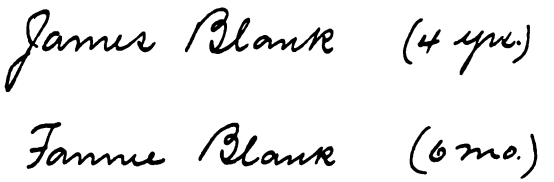
If the patient is a female adult the name should be written, as:



or Mary Blank (adult).

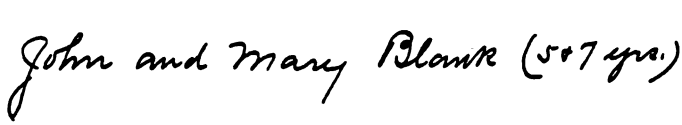
It is unnecessary to write Mr. John Blank (adult) or Mrs. John Blank (adult). The humbler the patient, the more he appreciates a title. The physician may know the patient as John, but in this democratic country he may prefer the druggist to know him as Mr. Blank. Young girls and young men are sometimes particularly jealous of titles, and there is no objection to prescribing for the young militia officer as Captain Blank or the country justice as Judge Blank. Other departments of human activity should not be allowed to maintain a corner on courtesy or policy.

If the patient is a child the name should be followed by information as to age, as:



The name should never be followed by a figure only, as Mary Blank (3); that might mean either years or months. Mrs. Blank's baby or Baby Blank should never be written, as Mrs. Blank's baby may be one year old today and the dose arranged accordingly, and next year Mrs. Blank may have another baby one month old and get hold of the medicine for the former patient, with unfortunate results. Also the word *baby* gives only limited information to the pharmacist, as a child often bears the title from the first hour up to five or more years of age.

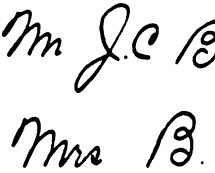
When the prescription is written for more than one patient, the prescriber may so specify, as:



The prescription may be written for one patient and written instructions left as to the use for the others, as *Give John a teaspoonful of James's medicine every three hours.*

It sometimes happens, as in prescribing for venereal diseases, that it is inadvisable to give much information as to the identity of the patient. In such cases it is still necessary for the druggist to have some aid in rechecking dosage, identifying the prescription, etc., and

for the doctor in handling his copies. Probably the best method is to merely use initials and give the age data, as:



This matter has been treated at some length, as it is a detail sadly neglected by the profession; and when it is so easy to do a thing right, there is little excuse for failure.

THE SUPERSCRIPTION.

The superscription consists of the sign ℞, which consists of the letter *R* with an oblique dash across the final stroke. The letter *R* is an abbreviation for the Latin word *Recipe,* meaning *take* or *take thou;* so it instructs the pharmacist to take of the ingredients mentioned below the amounts specified. The oblique dash across the final stroke of the *R* probably is derived from the old symbol ♃ which represented a prayer to Jupiter. It was the custom of the old Roman physicians to begin a prescription with this invocation to their God of Gods to bless the remedies. The theory as to the origin is strengthened by the fact that the early Christian physicians used, instead of it, the cross. The letter *R* and the symbol ♃ are very well represented by our present sign ℞.

Another theory is based on the claim that the oblique line was used by the Romans much as we use the period, and that in this instance it has no other meaning.

THE INSCRIPTION.

The inscription is that part which contains the name of the drug or drugs ordered and the amount desired. It is usually best written in Latin.

Some inscriptions may be divided into the following parts:

Basis, or principal ingredient.
Adjuvant—that which aids the action of the principal ingredient.
Corrective—that which modifies some undesirable action of the other ingredients.
Vehicle—that which facilitates the dispensing or administration of the other ingredients.

This is sometimes called the diluent or solvent and in the case of ointments is often called the base.

For example:

℞
Chlorali Hydrati 3iss
Potassii Bromidi 3iss
Syr. Aurantii f3ij
Aquæ .....q. s. f3j
M.

Here the hydrated chloral is the most active agent. The bromide aids the action of the basis. The syrup of orange modifies the unpleasant taste and tendency to nausea of the other agents. The water dissolves and dilutes.

It is often impossible to definitely classify the parts of an inscription. There may be more than one drug belonging to a class, as sodium bromide and potassium bromide may be ordered in equal amounts in the same prescription.

The same agent may act as a member of two or more classes, as in the following, where chloroform-water may be regarded as adjuvant, corrective, and vehicle at the same time:

Sodii Bromidi 3ij
Aquæ Chloroformi .....q. s. f3j

Of course, a large percentage of the prescriptions written only call for one or two items.

Each item and the character expressing its amount should be on one line except under circumstances as mentioned later.

In using unruled blanks, care should be exercised that the characters designating the quantity of an ingredient should be on a line with the name of the drug.

The total amounts of the ingredient should be specified in the inscription.

Sometimes a prescriber will specify the amount of each dose, and then order so many of such doses to be made. This practice is to be unqualifiedly condemned. It requires as much writing as the common method. It is so unusual that it may be overlooked or misunderstood by the pharmacist, and an educated physician should not throw the burden of making calculations on a drug clerk of unknown ability.

The following will illustrate:

℞
Hydrarg. Chlor. Mitis ..... gr. j
Sacchari Lactis ..... gr. x
M. ft. cht. mitte talis no. iij.

This was submitted to twenty registered pharmacists in one of our large cities, and five out of the twenty understood that the quantities as given were to be divided into three doses containing ⅓ of a grain of calomel to each dose.

It is better, for the sake of appearance and conformity to custom, to begin each word, forming a part of the name of an ingredient, with a capital letter, as:

Tinct. Opii Camph.
Sodii Bromidi.

ARRANGEMENT OF INSCRIPTION.

Several general methods of arrangements might be suggested, but no one fixed rule will apply to all cases.

The items may be arranged in the order of their importance, somewhat as basis, adjuvant, corrective, vehicle; but in many instances the basis may consist of more than one drug of practically equal importance, or it is sometimes impossible to definitely fix the items under these heads, as they may merge into each other or one agent may equally belong to more than one class.

The items may be arranged with the solids first and the liquids last, these respectively arranged as far as possible in the order of their importance.

Where a prescriber is competent to do so, it is often better to list the ingredients in the order in which they should be handled. For example:

℞
Tinct. Ferri Chloridi,
Acidi Phosph. Dil.,
Tinct. Nucis Vomicæ .....āā f℥j
Syr. Pruni Virg. .....q. s. f℥vj
M.

In this instance the Diluted Phosphoric Acid should be added to the Tincture of Ferric Chloride before the next item, which contains tannic acid, is added, else iron tannate will be formed and an unsightly mixture result.

Another example would be:

℞
Acetanilidi ..... gr. lxxx
Spir. Ammon. Arom. ..... f℥j
Caffeinæ Citratæ ..... gr. xxx
Sodii Bromidi ..... gr. clx
Elix. Aromatici .....q. s. f℥ij
M.

Here the Acetanilid should be dissolved in the Aromatic Spirit of Ammonia and the Citrated Caffeine and Sodium Bromide should be dissolved in the Aromatic Elixir, and the two solutions then carefully mixed.

Sometimes special instructions may be given as in the following:

℞
Phenolis ..... gr. v
Camphoræ,
Chlorali Hydrati .....āā. gr. xx
M. et adde
Ung. Aq. Rosæ .....q. s. ℥j

Here it is desirable to mix the first ingredients which liquefy and then incorporate them with the vehicle.

Good judgment should always govern the arrangement in the entire matter of prescription writing, but the prescriber can usually profit by bearing in mind the following suggestions:

It is usually best to have the most important ingredients first.

It is usually best to have the solids first.

If for any reason a special order of mixing is desired, it may often be indicated by arrangement.

The vehicle or diluent should always be last and practically always *q. s.* to make up to the total amount desired.

THE SUBSCRIPTION.

The subscription as here considered consists of the prescriber's directions to the compounder. It is usually written in Latin and almost always abbreviated; so the terminations are of no practical importance.

The primary consideration, here as elsewhere, is for the prescriber to so express his wishes that there is no possibility for any

misinterpretation, and if this cannot be done in Latin, it is certainly better to use good English.

Many of the abbreviations employed are so commonly used that there is no possibility of any misunderstanding as to what is intended, but many of those found in some textbooks and occasionally used are little known and unsafe.

Brevity is always a consideration, but should not be used at a sacrifice of completeness. The prescriber should say all that is necessary and then stop.

In a large percentage of prescriptions the single abbreviation *M.* (misce—mix) is all that is required. It is always wise to avoid telling the pharmacist to do something that is obviously necessary, as *M. et ft. sol.*, when the ingredients are such that they could not be mixed without making a solution, or *M. et ft. ung.* when an ointment is the only possible result of following the directions, *M. M. S. A.* (mix according to art) is always unnecessary, as the compounder is naturally going to employ the art of compounding to the best of his ability and understanding.

When the medicine is to be put into doses it is necessary to indicate the form of administration. The directions to the compounder may then be written, as *M. ft. cap. no. x,* or *M. ft. pil. no. x,* or *M. ft. cht. no. x,* etc.

When a special form of preparation is desired and it would be possible to make some other, it is best to specify, as *M. ft. emul.*

When it is desired to emphasize any particular point in compounding it may be specified, as when a solution is wished and it will take some effort to get one or more of the ingredients to dissolve. A druggist might not be familiar with the solubilities and merely mix the ingredients without triturating, depending on solution being effected before the preparation reaches the patient. Under such circumstances it is best to specify solution and, if the solid will not then dissolve entirely, the preparation cannot be dispensed without the prescriber's further instruction. An example would be:

Acidi Borici ..... gr. lxxx
Aquæ Destillatæ ..... f℥iv
M. ft. sol.

When it is particularly desired that the ingredients in a powder or ointment should be well incorporated, it should be specified. An example would be in the following prescription for the eye:

Hydrargyri Oxidi Flavi ..... gr. j
Petrolati .....q. s. ℥j
M. et tere bene.

When it is desired to explain at length some particular matter as to the compounding, it is often better to mark in the lower left-hand corner (*over*), and on the back of the paper explain fully in plain English what is wished.

SIGNATURA.

The signatura consists of the directions that are to be copied on the label by the compounder for the instruction of the patient or nurse. They should, therefore, always be written so that when copied *verbatim et literatum* they will constitute the desired label. The prescriber substantially tells the compounder to "write on the label the following," and while the druggist usually is competent and willing to take upon himself the responsibility of writing what he understands the doctor wishes, it still does not make the position of the careless prescriber correct. The point is well illustrated by an incident occurring in a Southern city, where the railway warehouse keeper was in the habit of directing a porter: "Go tell Mr. Blank that if he does not take out his freight I will come up and beat the face off him." The porter would modestly say to Mr. Blank: "The boss say wont you please git out your freight." A new porter finally terminated the custom by delivering the message literally, with disastrous results. This understanding of the instruction to the dispenser bars all Latin abbreviations and, in fact, all but complete plain, every-day English.

Dismissing as even not meriting discussion such as Teaspoonful *t. i. d.* or ℥j *q. 3 v. 4 h.*, we will take up the simple English directions.

The directions *As directed* are justifiable only under rare conditions, if ever, and then only when the remedy would hardly admit of injurious use; for example, in the use of mercurial ointment by inunction; and then it would be better to indicate something more, as *Apply as directed* or *Apply with massage as directed.* In the case of a remedy as a concentrated solution of potassium permanganate to be used in making a vaginal douche, in composing the label the patient's feelings must be considered. Many merely order *As directed.* There are few objections to and many reasons for a label as *Use tablespoonful to gallon of hot water,* or *Dilute with hot water and use as directed.*

In directing the use of urethral injections it is permissible to put *Use as directed;* this contraindicates *Take as directed,* as would also be the case in the douche just mentioned. In fact, always where a liquid is not to be administered by mouth, it is wise to so indicate on the label. Some use instructions as *Not to be taken,* and, in case of a poison, *Poison—not to be taken.* Separate labels bearing these and other legends are frequently employed, but it is much more desirable to have pharmacists use a prescription label carrying the printing desired on its face, as a separate label might become detached. It is understood in many places that the part of the signa that the prescriber puts in quotation marks may be supplied by dispenser with printed label. For example:

Sig.—"Poison."
Use to moisten dressing.
Sig.—"Not to be taken."
Apply to back with massage.
Sig.—"For external use."
Apply to swelling twice daily.

Or, if there is any doubt about the particular druggist understanding:

Sig.—(Poison-label.)
Use to moisten dressing.

In this connection attention should be called to the many objections to the unfortunate practice of using certain classes of special labels or label information, as "For Cough" or "Teaspoonful every 2 hours for Cough;" "For Fever" or *Teaspoonful every 2 hours for fever.* For example: In a certain city one "For Diarrhea" prescription was used hundreds of times and for scores of patients suffering with almost every variety of intestinal disturbance. For the original patient and condition it probably was excellent, from all reports; but when used without the necessary intelligent discrimination, it becomes an injustice not only to the patient but to the original prescriber, who is to some extent held responsible for his remedies, even under these conditions, and he and his confrères sustain a loss of legitimate practice represented by the cases that are cured. This example is merely an illustration of a state of affairs that in some communities, particularly, is unfortunately only too prevalent. The prescriber should always remember that in the greater part of the country the custom of the dispensers giving copies of prescriptions

on request of patient is so well established that "business judgment" prevents a refusal to conformity.

Unnecessary words should be avoided, especially in the case of prescribing pills, capsules, tablets, etc., as these are dispensed in containers that have very limited label space. To illustrate: The label *One pill three times a day before meals* could be written *One before meals* or *One before each meal,* for the reason that where *one* is to be taken, and there is nothing but pills in the container, the patient hardly needs specific instructions to take a *pill.* The *three times a day* may under most circumstances be *omitted,* as the patient is probably definitely understood to be taking three *meals* a day. Only in the case of infants or special feeding, where more than three regular meals are being taken, would a question be raised.

Directions are frequently put up to a dispenser to be put on a label an inch in diameter, such as *Take the capsules an hour apart and three hours after last capsule take a bottle of Citrate of Magnesia.* Better would be a label *Take an hour apart* and the instructions as to the saline given to the patient on a special sheet of instructions, as will be discussed later.

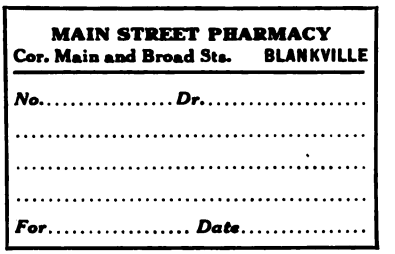
Care should be used in the arrangement of words. *One before each meal in water* would be better *One in water before each meal.* Or, for example, *Teaspoonful on retiring in water* might appear better as *Teaspoonful in water before retiring.*

Where the common quantities as teaspoonful, tablespoonful, and drops are used and the remedy is not for internal use, the first word of the label should so indicate, as *Apply teaspoonful to swelling, Pour tablespoonful on bandage, Put one drop in eyes three times daily.*

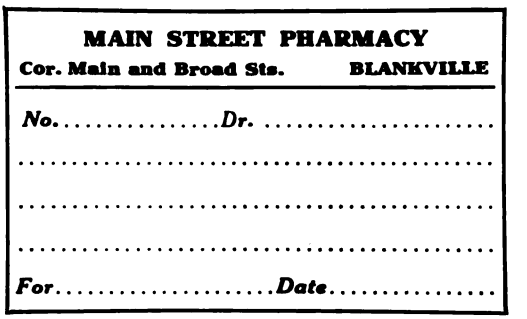
In prescribing powders more label room is available, as they are usually dispensed in envelopes or comparatively large boxes. In the case of liquids the label space available will depend to some extent on the size of the bottle ordered. The label that will fit a half-ounce bottle is so small that only a very few words can be written on it, while a comparatively large label may be used on bottles holding twelve or sixteen ounces, or even on those holding four ounces. It must be remembered that, whatever else may or may not be written on the label, the druggist must have his business card and also put the number and date of the prescription and the name of the doctor and patient, and many also put the name of the clerk compounding the formula.

The following represent labels that may be used on the various-size containers, and show the other information that must be written in addition to the prescriber's instructions.

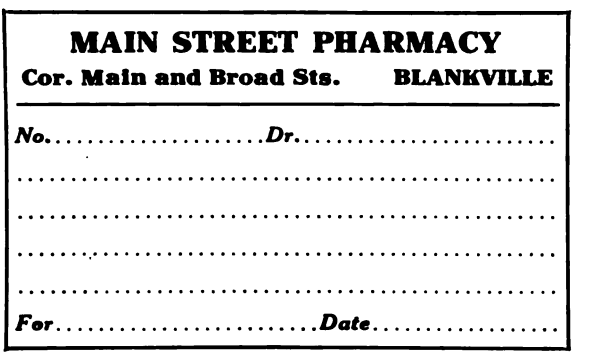
Of course, these are only rough averages, as there is no uniformity in these matters:



For ½, 1, and 2 fluidounce bottles.



For 2, 3, and 4 fluidounce bottles.



For 4, 6, and 8 fluidounce bottles.

MAIN STREET PHARMACY
Cor. Main and Broad Sts. BLANKVILLE

No......*Dr.*.....

.....

.....

.....

.....

.....

For.....*Date*.....

For 6 or more fluidounce bottles.

For boxes holding from 1 to 4 capsules or ½-ounce ointment jars.

For boxes holding from 4 to 12 capsules or for 1-ounce ointment jars.

For boxes holding from 12 to 24 capsules or for larger ointment jars.

Suppository boxes have very little label space.

Larger quantities of capsules are put into square boxes, which give more label space.

If a "shake" label or other special label is used, less space will be available, as a smaller label will have to be employed.

PRESCRIBER'S NAME.

The prescriber's name should always be so written as to leave no possible doubt as to identity at any time.

When the prescriber uses his own private blanks carrying his name and address, he can naturally take more liberties than when such is not the case. Where the private printed blanks are used it is the custom to merely sign the surname or even that monstrosity of penmanship, the fancy signature, may be permitted.

Among the reasons for the foregoing might be mentioned that in the case of those agents which can be dispensed only on physicians' prescriptions it is necessary to have the full signature of the physician. This is now required by the Federal Narcotic Law on all prescriptions affected. If the blank does not carry his name and title his signature should always include his medical degree if the drug is one the sale of which is restricted by law. In cases of unusual or uncertain doses it is only justice to the compounder that the prescription be properly signed to constitute an order in the full legal sense. It is not advisable to force the pharmacist to ask the patient who wrote the prescription. The physician may flatter himself that every one knows who *B* or *J* is, but the compliment may not be fully merited. The patient may leave the prescription to be called for later or to be sent to his address, and after his departure it may develop that it is necessary to communicate with the prescriber, and the questions who? when? where? are not answered by the paper in hand.

CALCULATING AMOUNTS.

In writing the inscription a matter of some embarrassment to the beginner is calculating the total amount to order of each ingredient.

The usual method is to write first the name of each drug, then decide on the number of doses in the prescription, and by making the vehicle *q. s.* to the desired bulk, or ordering the desired number of capsules, etc., and writing the directions, get the number of doses

fixed before the writer; then beginning with the first drug multiply the amount desired for each dose by the total number of doses of the finished product.

For example:

℞
Sodii Bromidi,
Elix. Aromatici .....q. s. f℥ij
Sig.—Teaspoonful in water every three hours.

Two fluidounces being the total quantity and a teaspoonful the dose, the number of doses would be sixteen. If ten grains of Sodium Bromide are desired at each dose, the amount would be 16 times 10, or 160 grains.

Or:

℞
Quininæ Sulphatis .....
Ferri Reducti .....
M. ft. cap. no. xx.
Sig.—One after each meal.

If it is desired to give two grains of the quinine salt at a dose and there are twenty doses, the amount of the salt would be 20 times 2 grains, or 40 grains.

In ointments, etc., the amounts are usually based on per cent.;

Phenolis,
Petrolati .....q. s. ℥j
M.
Sig.—Apply twice daily.

If it is desired to use about 1 per cent. of Phenol the calculation is 1 per cent. of 480 grains, or 4.8 gr. (or about 5 grains) total quantity of phenol.

A method sometimes used for calculating approximate amounts is as follows:

Base the calculations on an 8-fluidounce prescription with teaspoonful doses. This would give about 60 doses to the entire quantity. For each ingredient write for as many drachms or fluidrachms as it is desired to give grains or minims at a dose.

For example:

℞
Sodii Iodidi,
Elix. Aromatici .....q. s. f℥viij
M.
Sig.—Teaspoonful in water three times a day.

This would give about 60 doses, and as a drachm is 60 grains, each dose will contain about as many grains as there are drachms in the total quantity of the salt. If it is desired to give 5 grains at a dose write for 5 drachms of the salt.

A 4-fluidounce prescription would naturally require one-half the number of drachms or fluidrachms as grains or minims were desired at a dose. Fluid prescriptions of any size may be adjusted on this basis. The same rule would apply in writing for 60 pills or capsules or greater or less amounts adjusted as in the case of fluids.

In metric prescriptions the following excellent scheme has been suggested:

A gramme or a mil contains about 15 or 16 grains or minims respectively. The slight difference is immaterial. In ordering fluid preparations base the calculations on a 60 mil quantity (about 2 fluidounces) with teaspoonful doses; this will give about 16 doses. For each item (except, of course, the vehicle) write for as many grammes or mils as it is desired to give grains or minims at a dose. For example:

℞
Sodii Bromidi,
Elix. Aromatici .....q. s. 60|
M.
Sig.—Teaspoonful in water every three hours.

As this would contain about 16 doses and a gramme is about 16 grains, for each gramme of the salt ordered the patient would get a grain at a dose. So if it is desired to give ten grains of the salt at a dose, write for ten grammes in the inscription.

Larger or smaller prescriptions can be arranged on the same basis.

In ordering capsules, pills, etc., if the prescription calls for 15 or 16 the patient will get as many grains in each dose as there are grammes in the total quantity. Prescriptions for greater or less number can, of course, be calculated on the same basis. The scheme is too simple and its advantages too obvious to require discussion.

It is a safe plan to calculate the amounts by one of the methods mentioned and, in rechecking, to use another, as this reduces the chance for error to a minimum.

CHOICE OF VEHICLE.

In selecting a vehicle for a liquid prescription the prescriber must consider its solvent action, compatibility, taste, odor, color, and cost.

Solvent Action.—If it is desired to administer a drug in solution the vehicle must naturally be one that will dissolve that particular substance. This matter is discussed at some length elsewhere, but the following general rules will bear repetition:

Salts (metallic or alkaloidal) and gums are usually more soluble in aqueous liquids. Alkaloids, oils, resins, oleoresins, and some coal-tar products are more soluble in alcoholic liquids.

If it is desired to administer a drug in suspension the vehicle must naturally be one that will not dissolve that particular drug.

Compatibility.—This is taken up in detail on page 397.

Taste.—The matter of taste is one that cannot be overlooked. Unpleasant developments, as nausea and vomiting, may result from a disagreeable preparation. The patient may, if an adult, refuse to take the medicine, and, if a child, the struggle to administer the dose may often more than counterbalance the good effect of the remedy. To a certain extent the people demand to be cured not only quickly but pleasantly, and if one physician can not or will not do it another will.

Odor.—Disagreeable odors are usually unnecessary and possess all the bad features mentioned in regard to taste.

Color.—Under this head might be included the matter of general appearance. When it is possible to do so without a sacrifice of quality, it is certainly better to order a preparation that will be elegant in appearance. Color often has some psychic effect. It is very common to hear a patient rail against the doctor who "did not give me anything but water."

Cost.—This is often a factor. Unless there is a definite reason for so doing, an expensive vehicle should not be employed. The remark is common when a doctor writes for an expensive proprietary q. s.: "I do not think that it is much good, but it makes a good vehicle." The patient has to pay for that good vehicle.

The following very imperfect list of vehicles are among those worthy of special mention:

Water should be considered as the one great vehicle, and employed unless there is some reason against its use. Make it the agent of first thought in prescribing solutions, and elaborate from it.

Distilled Water is valuable when it is desired to use a vehicle free from matter that might result in chemical action, as in prescribing silver nitrate, etc.

Peppermint-water, Cinnamon-water, and Chloroform-water are valuable where there is nausea and for disguising the taste of many salts.

Aromatic Elixir, which contains about 25 per cent. Alcohol, is a very valuable vehicle. It is a good solvent, has a pleasant taste and odor, and the alcoholic content makes it a good preservative. It is particularly desirable in prescribing such salts as the bromides, alkaloidal salts, etc.

Syrup of Tolu, Syrup of Lemon, Syrup of Wild Cherry, and Syrup of Squills are used particularly in prescribing cough mixtures. They are used as the vehicle alone or with water.

Mucilage of Acacia, Syrup of Acacia, and Syrup are frequently employed when insoluble agents are to be suspended in a liquid.

Compound Tincture of Gentian and Compound Ticture of Cinchona are used as vehicles in prescribing bitter tonics. They, of course, are not compatible with ferric salts. They contain about 50 per cent. alcohol, which must be taken into consideration.

Tincture of Sweet Orange and Compound Spirit of Orange are good alcoholic vehicles, particularly for such drugs as creosote, guaiacol, etc.

Alcohol is an indispensable part of many other vehicles and is frequently used alone, as when prescribing agents requiring its solvent effect or preservative action.

Glycerin is frequently employed alone or in connection with other vehicles, particularly for such agents as phenol, iodine, tannic acid, etc.

Soap Liniment is a useful vehicle in prescribing liniments. To it can be added such agents as chloroform, menthol, etc.

Liquid Petrolatum is the vehicle of common choice for prescribing oil-soluble drugs as sprays, particularly such agents as camphor, menthol, and the volatile oils.

Sugar of Milk is the most commonly used vehicle in prescribing powders. It is an inert, white powder, without odor and of a mildly sweet taste.

Aromatic Powder is a finely powdered mixture of spices, and is often useful in disguising taste and odor and in giving bulk and color to powders.

Petrolatum for ointments occupies the place that water does for solutions. It should be the vehicle used unless there is some reason to the contrary. It is inert, odorless, clean, and permanent.

Ointment of Rose-water is an excellent ointment base.

Hydrous Wool-fat is used as a vehicle in ointments when absorption of the active agent is desired.

QUANTITY OF A PRESCRIPTION.

Only a comparatively small percentage of the medicine manufactured is actually taken by patients. Much is lost from one cause and another while still in the hands of the manufacturer. The warehouses of the wholesale druggists are fairly packed with medicine that has spoiled, is out of date, unpopular, etc. A good part of the retailers' gross profits are represented by similar articles, and last, but not least, almost every family has a medicine chest which, in spite of frequent "cleaning ups," contains the remains of many prescriptions usually representing the poor judgment of the prescriber. The custom of prescribing in quantities too large has many objections. The patient is put to unnecessary expense; the unused portion remains as a monument to the doctor's error, for it is usually an error to prescribe more than a patient needs. The patient feels that if the physician had understood the case he would not have prescribed two or three times more than was necessary. It may be used in subsequent sickness with unfortunate results, in that or some other family, or either by its aid or in spite of it the future patients recover without a consultation and the doctor is deprived of a legitimate fee.

In many instances even where a considerable quantity of the agent will be used it may be advisable to prescribe comparatively small amounts on account of possible deterioration, as in the case of certain syrups in warm weather. The quantity should usually be such as the prescriber feels reasonably sure the patient will require before deterioration occurs or a change is necessary or a cure is effected. As examples:

In prescribing an ointment of yellow mercuric oxide for the eyelids, 1 drachm is usually all that is necessary. In any event it is enough to order, as the possibility of dust from the atmosphere, dirt from fingers, etc., makes it desirable not to use the same package too long. For a case of scarlatina where it is desired to prescribe a cold-cream application for the skin during desquamation, a half-pound or pound may be ordered at one time to advantage. To break up a cold one dozen capsules may be more than enough, while in prescribing ferrous carbonate for chlorosis a prescription for less than 100 doses will probably be putting the patient to unnecessary trouble and expense.

As a rule in conditions of more or less chronic character, where the patient is under observation and the necessity for change possible, from seven to ten days' treatment is a convenient amount. If a liquid is being administered in teaspoonful doses three times a day, three or four fluidounces would be the amount indicated.

Sometimes, as in prescribing tonics, it is advisable to order enough to have some effect, particularly if the patient may not be under regular observation. A twenty- or thirty- day treatment may be justified.

A study of almost any prescription file shows a distressing number of 16-dose tonics and 64-dose headache mixtures.

The prescriber should always remember that too great a discrepancy either way between the needs of the patient and the amount of his order shows a lack of grasp of the situation and may well shake the confidence of the patient. With regard to having the patient frequently refill small prescriptions the prescriber should remember that the druggist justly makes a charge for his time, and usually four two-ounce prescriptions will cost the patients two or three times as much as one eight-ounce prescription calling for the same ingredients.

PROPORTIONING DOSAGE.

By the dose of a drug is meant the average dose for the average adult under average conditions. Variations from the usual require special consideration. .

The prescriber must consider the age, size, sex, temperament, habits, and condition of the patient, and the action of the drug employed.

Age.—Young's rule is the one most commonly used for proportioning the dose for a child. It is: *Divide the age of the child in years by the age plus twelve to obtain the fraction of the adult dose.* For example: If the adult dose of a medicine is 20 grains, to find the dose for a child four years old, divide the age (4) by the age (4) plus 12 to obtain the fraction of 20 grains desired:

$$\frac{4}{4+12} = \frac{4}{16} = \frac{1}{4}. \quad \frac{1}{4} \text{ of } 20 = 5.$$

Five grains would, therefore, be the dose for a child four years old. Another rule is: *Make* 20 *the denominator of a fraction the numerator of which is the age of the child expressed in years. The result is the fraction of the adult dose.* By this method if the dose

for an adult is 20 grains, to find the dose for a child four years old the following would be the calculation:

$$\frac{4}{20} = \frac{1}{5}. \quad \frac{1}{5} \text{ of } 20 = 4.$$

Four grains would, therefore, be the dose required.

It will be observed that these rules only apply to those children whose ages are expressed in years. In the case of infants each is a problem unto itself.

Size.—The size of a patient is naturally an important factor. It would be manifestly unwise to expect a child four years old and weighing only 20 pounds to tolerate what would be a normal dose for another child of the same age and weighing 40 pounds. A man six feet high and weighing two hundred pounds may require different dosage from one five feet high and weighing one hundred pounds.

Sex.—Women are, on the average, smaller than men; their organs are smaller; they have less blood; they are weaker and perform less work. These facts should receive due consideration in prescribing, and the average dose is usually smaller than for men. There are some exceptions; for example, purgatives, which are generally required in larger doses and stimulants in comparatively smaller doses for women than for men.

Temperament.—This in some instances is an important factor. For example: A patient of a highly nervous type can tolerate less strychnine than can one of a phlegmatic temperament.

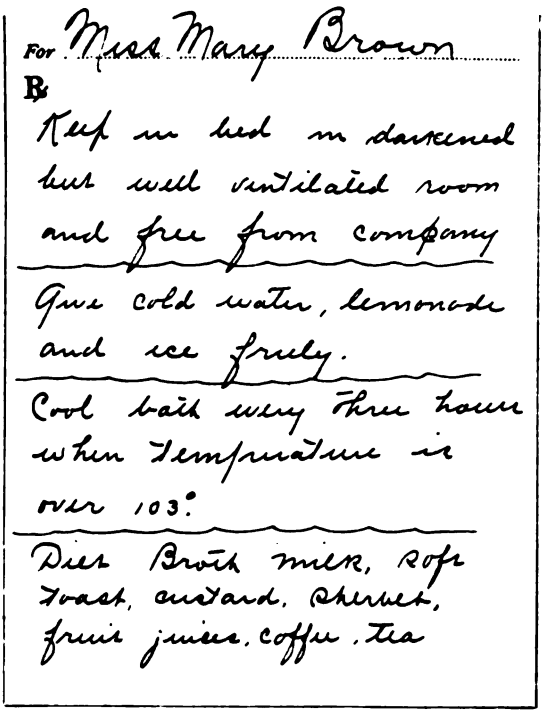
Habit.—This must often be considered. One addicted to opium, alcohol, coffee, etc., will require larger doses of these drugs to produce a desired effect than will one who has not previously used them. A patient who has been taking potassium iodide can frequently be given comparatively large doses without unpleasant effect.

Condition.—The condition of the patient is almost always an important consideration. The weak, anemic patient may not be able to tolerate the same dose of a purgative that would be a benefit to one who was of the robust, full-blooded type. A child in the paroxysmal stage of whooping-cough may be given antipyrine to advantage in doses several times the usual proportion.

The Drug.—Some drugs are exceptions to the foregoing rules. For example: The same dose of castor oil is usually given to a child over two or three years old as to an adult. Calomel is ordinarily given in comparatively large doses to children, while opium is usually best administered in comparatively small amounts to children.

WRITTEN INSTRUCTIONS.

In connection with the writing of prescriptions, particularly with the matter of the *signatura* or instructions for label, it is important to consider the means of giving more complete directions to patient or nurse, as it must be remembered that the label space is limited and yet that instructions should be complete. As elsewhere suggested, it is best to leave with each case special instructions which may be conveniently written on the regular prescription blanks, and a carbon copy retained by the prescriber and filed with the copies of prescriptions and other data relating to that case. Where a trained nurse is in charge the matter may often be simple, but where, as is usually the case, an anxious and excited mother or wife is the one to look to, the instructions can hardly be too explicit. Where several medicines are to be given, a time chart is almost indispensable if correctness is to be expected. This, with the other instructions, may be arranged something like the following, which is taken from the instructions left for a case of tonsillitis:


For Miss Mary Brown

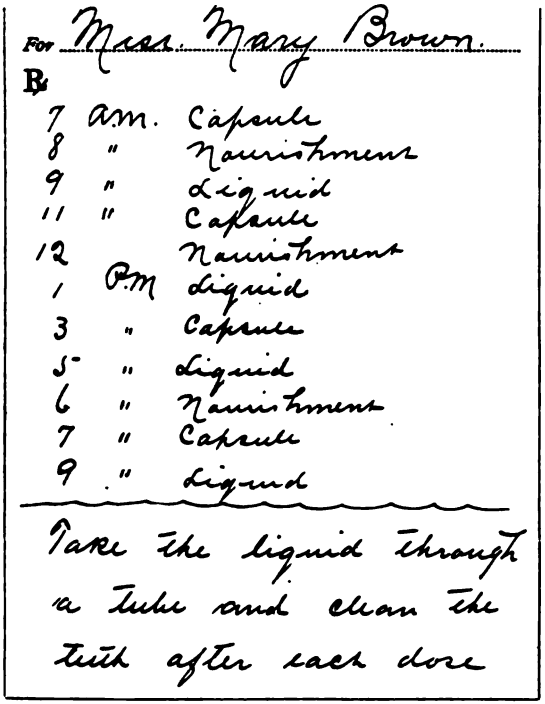
℞

Keep in bed in darkened but well ventilated room and free from company

Give cold water, lemonade and ice freely.

Cool bath every three hours when Temperature is over 103°.

Diet Broth milk, soft toast, custard, sherbet, fruit juices, coffee, tea



In arranging the chart after treatment is under way, it is best to list the prescriptions by number.

In the written instructions it is particularly desirable to include such items as: *Give a tablespoonful of castor oil two hours after last powder;* or, *If bowels have not acted by noon give enema of half-gallon of warm water with one tablespoonful of table salt;* or, *If not asleep by eleven o'clock give another powder, but not again during the night.*

A diet list should always be written and a copy retained by the prescriber. Instructions for modified milk, etc., should always be written and a copy retained. Formulæ for home preparation should always be written, as: *Dissolve one teaspoonful of Boric Acid in a glass of warm water and bathe the part every three hours.*

Receipts for special articles of diet should usually be written, as the following for a milk-shake:

1 fresh egg;
1 tablespoonful malted milk;
Cracked ice;
Flavor, as sherry, chocolate, or grated nutmeg;
Milk to fill shaker;
Shake in milk-shaker and take two hours after each meal.

CONCENTRATED MIXTURES.

Whether the practice is just or not, the fact remains that the druggist bases his charges, to a considerable extent, on the size of the preparation dispensed. The best interests of the patient should be the paramount consideration in the prescriber's mind; he can, therefore, frequently concentrate the preparations and allow the patient to add the water,—often known in the drug-store as "profit." As an example: A physician wishing to have a poor patient use a wet bichloride dressing and, as is usually the case, not thinking it advisable to prescribe tablets, ordered a pint of a 1:5000 solution. He found that the druggist charged $1.50. The next order was for a two-ounce solution 1:500, with directions to use one teaspoonful to nine teaspoonfuls of water; the price charged was 25 cents.

The same conditions obtain in such cases as in prescribing potassium iodide in syphilis, or in ordering solutions of potassium permanganate for douches, irrigations, etc.

To illustrate another point: A concentrated solution of corrosive mercuric chloride was ordered with directions "Use one teaspoonful to two tablespoonfuls of water to wet bandage." A dermatitis was produced, as a large teaspoon and a small tablespoon were used and a dilution of little more than 1:2000 resulted; so it should be remembered that, when possible, the patient should be instructed to use the same measure for the drug and the diluent.

SATURATED SOLUTIONS.

A *saturated solution* is often ordered. The custom is subject to criticism. Many employ the term in prescribing potassium iodide, sodium phosphate, etc., when they want a solution representing a grain to the minim. The druggist usually understands what is desired and fills the prescription accordingly, but the order is open to criticism.

A saturated solution is one that contains all of the solid that will dissolve in the given solvent. Water is usually understood to be

the solvent unless otherwise specified. The amount of a salt that will be dissolved depends to some extent on the temperature and other conditions. In no instance is the finished product just one grain to the minim. When such concentration is desired the inscription may be written as:

Potassii Iodidi ..... ℈j
Aquæ .....q. s. f℥j

In the case of agents, as boric acid, where a concentration of a grain to the minim is not obtainable or desired, it is even more necessary to prescribe a definite amount of the salt.

The druggist usually handles orders for *saturated solutions* of this class by adding the salt in slight excess of the solvent, triturating and filtering. The amount of the drug that dissolves will depend very much on the patience and energy of the compounder. The prescriber should know the solubility and arrange the prescription accordingly. For example:

Boric acid is soluble in 18 parts of water. The full amount that is possible to get into solution should not be employed, as the statement "soluble in 18 parts of water" means that 1 part is the maximum amount that may be dissolved in 18 parts of water even under the most favorable conditions and by the expenditure of unlimited time and effort. These factors cannot be expected in the filling of prescriptions; so it is always better to order an amount slightly less than the quantity indicated by the given solubility.

The inscription may be arranged as follows:

Acidi Borici ..... gr. xx
Aquæ Dest. .....q. s. f℥j

The prescriber then knows what his patient will receive.

PERCENTAGE SOLUTIONS.

This is found to be one of the hardest problems in prescription writing, to impress upon the student. Some grasp it with such facility and it seems so simple withal that an apology would seem necessary for laying any stress upon it; but in almost any senior medical examination, where every student thinks the matter either mastered or too simple to be worthy of study, less than half of the exercises will be found correctly written. Some methods of calculation might be illustrated, as follows:

The quantities for a four-fluidounce prescription for a 5 per cent. solution of liquefied phenol in glycerin.

If the complete prescription contains 4 fluidounces or 32 fluidrachms, 1 per cent. would be $\frac{1}{100}$ of that amount and found by pointing off two decimal places (0.32 drachm) 5 per cent. would be five times as much, or $0.32 \times 5 = 1.60$ fluidrachms, or 96 minims.

Or, 5 per cent. is equal to one-twentieth; therefore, $\frac{1}{20}$ of the total bulk of the prescription must be liquefied phenol, the prescription containing 4 fluidounces. $\frac{1}{20}$ of 4 fluidounces equals $4 \div 20 = \frac{4}{20} = \frac{1}{5}$ of a fluidounce. One fluidounce being 480 minims, $\frac{1}{5}$ would be $480 \div 5 = 96$ minims.

Or, the prescriber soon remembers that 4.8 minims are 1 per cent. of a fluidounce; therefore, 5 per cent. of a fluidounce is $4.8 \times 5 = 24$ minims; then 5 per cent. of 4 fluidounces would be $24 \times 4 = 96$ minims.

In making a correct percentage solution all items must either be weighed or measured. It is not correct to weigh the shot and measure the feathers.

Water at standard temperature, etc., weighs 456.37 grains to the fluidounce of 480 minims; therefore, 4.8 grains of cocaine hydrochloride with water to make a fluidounce is not strictly speaking a 1 per cent. solution by either weight or measure. There should be 4.56 grains of the cocaine salt. The prescriber seldom finds such exactness necessary, but may well carry in mind 4.5 grains of the solid as the 1 per cent. quantity of a 1 fluidounce aqueous solution of solids.

The metric system being a decimal one, the matter of percentage solutions is simplicity itself:

Phenolis Liq.,	
Glycerini	q. s. 120

120 being the total quantity, 1 per cent. is found by dividing by 100, that is, pointing off two decimal places = 1.20; 5 per cent. by multiplying 1.20 by 5 = 6.00:

Phenolis Liq.	6
Glycerini	120

In, say, a 25 per cent. solution, 25 per cent. is one-fourth of the total; therefore, $\frac{1}{4}$ of the total quantity (120) is 30, which would be the quantity of the liquefied phenol for a 25 per cent. solution.

FORMS OF ADMINISTRATION.

Before writing his prescription the physician must first decide, from the condition of the patient, as to the effect to be produced,

then the agent that will best produce the desired effect, then the most desirable route under the circumstances to get the remedy into action, and then the most desirable form in which to administer it. To produce a systemic effect, drugs may be given by mouth, rectum, skin, hypodermically, intravenously, or by inhalation.

The mouth is the natural channel for the intake for all matter except oxygen. Doses, not otherwise specified, are understood to be by this route. Medicines for general effect are supposed to be administered by mouth unless there is some reason to the contrary.

It should be remembered that in some conditions, as when much undigested food is present, or when the patient is in great pain, absorption from the stomach may be delayed.

The intravenous method gives the quickest results and the dose is smallest.

Hypodermic administration is next in point of prompt action and smallness of dose. The dose is usually one-half to two-thirds of that by mouth.

Rectal administration gives slower results than by mouth, and the dose is usually 50 to 100 per cent. larger.

The local effect may be produced by any method that brings the agent into contact with the part to be affected.

By Mouth for Systemic Effect.

Solutions.—It is a safe rule to make this the form of first choice and use, unless there are reasons to the contrary, as odor, taste, insolubility, etc.

Liquids not Solutions.—This includes mixtures, emulsions, etc. They are employed when an agent is administered by mouth that is insoluble in the desired vehicle and there are reasons against giving in capsules, powders, etc.; also when the taste would be objectionable if in solution. Examples are bismuth salts suspended in thick liquids, oil of turpentine in emulsion, quinine salts suspended in chocolate syrup, etc.

Capsules.—This is one of the most convenient and agreeable forms for administering medicine. They are particularly useful for drugs of unpleasant taste or odor, as quinine salts, thymol, etc. The effect is not produced as quickly as when the drug is in solution, and they should not contain agents in such form as will cause irritation of the alimentary mucosa. It should be remembered that small children and many adults are unable to swallow capsules or are nauseated

by them. Before prescribing capsules it is always best to ascertain if the patient can take them.

Papers.—By papers is here meant doses of medicine wrapped up in papers (cht.) instead of put into capsules or other container. The form answers well for those powders that are not disagreeable in taste or odor, as calomel with milk sugar, sulphonmethane, etc.

Pills.—This is a convenient form for the administration of some drugs, as silver nitrate, phosphorus, etc., and is sometimes an economic method where the drug is to be continued for a considerable time, as in giving yellow mercurous iodide for syphilis or ferrous carbonate for chlorosis. It is not often that a prescriber should order pills to be prepared extemporaneously. Pills of silver nitrate or phosphorus cannot usually be made to advantage by the local druggist, and if it is desired to have freshly prepared doses of such agents as ferrous carbonate or yellow mercurous iodide it will be better for many reasons to order capsules. Pills are subject to many disadvantages, such as hardening and becoming insoluble, crumbling, tasting if not coated, sticking together if coated, etc.

Tablets.—Hypodermic tablets and tablet triturates usually disintegrate readily when taken into the stomach, and are sometimes a convenient form for administering medicines of small dosage. If the medicine is disagreeable, as strychnine, the patient does get the benefit of it to some extent, particularly if hypodermic tablets are used. Compressed tablets are usually hard and very apt to disintegrate slowly, if at all, in the alimentary tract. Their usefulness is very limited to the prescriber, though they are sometimes a great convenience to the dispensing physician.

Cachets.—This is not usually considered a practical method of administration, in this country.

By Rectum for Systemic Effect.

Liquids.—For the best results the agent should be in solution and so diluted as to be non-irritating. When possible, the rectum should be first cleansed by irrigation and the bulk of the dose should not exceed about six fluidounces for an adult.

Medicines are sometimes administered to advantage by the Murphy drip.

Suppositories.—These are usually made with a vehicle of cocoa butter. They should be non-irritating and the active agents should be readily soluble.

Rectal administration is often useful, particularly when the upper alimentary tract is intolerant, as in gastric irritation or when there is much nausea, or when it is undesirable for any other reason to give a remedy by mouth, as in appendicitis, etc.

HYPODERMIC AND INTRAVENOUS ADMINISTRATION.

These methods are resorted to when quick results are demanded or when there are reasons against the use of other routes. The agents should usually be in solution and non-irritating. The operation should, of course, be aseptic.

By Absorption from the Skin.

This is not often a practical route for producing the systemic effect of a drug. The principal exception is inunction of mercury for syphilis.

By Inhalation.

To produce a systemic effect by absorption from the mucous membrane of the respiratory tract a drug must be in the form of a vapor. The most common example of this form of administration is the use of chloroform, ether, amyl nitrite, etc.

Local Effect.

This may be produced by any method that brings the agent into contact with the part to be affected. Solutions, mixtures, ointments, powders, and practically all forms of medication are employed. Examples are: liniments, ointments, dusting powders, eye-washes, nasal sprays, gargles, mouth-washes, enema, injections, caustics, etc.

COMPARATIVE DOSAGE OF PREPARATIONS.

In remembering dosage it is often advisable for the prescriber not to try to remember the dose of each preparation of a drug, but to remember the dose of the drug itself; then the dose of the preparations can be called to mind by the following rules:

The dose of the fluidextract is the same in minims as the dose of the drug in grains.

The dose in minims of the tincture is usually ten times the dose in grains of the drug.

The dose of the extract is usually one-fifth the dose of the drug. For example:

Nux Vomica—dose, 1 grain.
Fluidextract of Nux Vomica—dose, 1 minim.
Tincture of Nux Vomica—dose, 10 minims.
Extract of Nux Vomica—dose, ⅕ grain.

This, of course, is approximate only, but in the largest percentage of cases it answers all requirements and is often a valuable aid to memory. Where the dose of the drug is large, as 30 to 60 grains, the rule as to the tincture will not often apply.

A rule can hardly be given for preparations as infusions, elixirs, etc., but the fluidextract, tincture, and extract are the preparations of common use.

THE PHARMACOPŒIA.

A Pharmacopœia is a book compiled by a recognized authority and containing a list of drugs with information concerning them. The United States Pharmacopœia is not published by the government, as is the case in some countries, but it is accepted by the government as standard in as far as it goes, and this gives it all necessary prestige. For example, the Pharmacopœia fixes the strength of tincture of opium at 10 per cent., and the government requires that for government use, interstate commerce, etc., a preparation to be called tincture of opium must have 10 per cent. strength. State drug laws also recognize the Pharmacopœia as does the federal government.

The United States Pharmacopœia was first published in 1820, and each ten years it is revised by a committee selected by the Pharmacopœial Convention, which is composed of representatives from incorporated medical and pharmaceutical colleges and associations and the Army, Navy and Public Health Service.

THE NATIONAL FORMULARY.

The National Formulary is a book containing formulæ of preparations not included in the Pharmacopœia, but that are still considered of sufficient importance to render standardization advisable. It is published by the American Pharmaceutical Association.

DISPENSATORY.

A Dispensatory is a commentary on the Pharmacopœia. They contain all that the Pharmacopœia states regarding official drugs and

much additional information. They also treat of other drugs not included in the Pharmacopœia. They are compiled and published as private enterprises and contain a vast amount of information that is invaluable to the student of Materia Medica.

The American Medical Association is maintaining a department for the investigation of unofficial preparations offered the medical profession. The effort is made to eliminate fraud and encourage merit. The remedies included in these volumes are those found to meet certain requirements. It is one of the greatest advances ever made in Materia Medica.

OFFICIAL DRUGS AND N. F. PREPARATIONS.

An official drug is one that is contained in the Pharmacopœia. In prescribing an official drug it is not necessary to write *U. S. P.*, as that is understood.

In prescribing a preparation of the National Formulary, if it is particularly desirable to get the N. F. product, it is usually best to specify *N. F.*, as pharmacists are not always very familiar with the formulæ of this valuable guide.

While it is inadvisable for a prescriber to even try to confine himself to the Pharmacopœia and National Formulary, they certainly contain the vast majority of drugs that should be used. These books should be in the library of every physician, and he should so familiarize himself with their contents as to know what agents he can get so well standardized and give them the preference.

PROPRIETARY AND PATENT MEDICINES.

The use of these preparations by the medical profession is certainly carried to excess. The distressing neglect of Materia Medica by the majority of our medical colleges is probably the chief cause of the fault. Students are given a limited knowledge of a few drugs. They are not sufficiently grounded in a knowledge of medicines as to enable them to meet the demands of practice or to intelligently discriminate between the good and the bad of what is afterward offered them. They soon realize the inadequacy of their armamentarium and seize upon any suggested additions. This means, of course, that they fall an easy prey to the detail man, the circular, or the well-filled advertisement page.

Many of the patent or proprietary medicines are excellent preparations. Our Pharmacopœia and National Formulary are stocked

with remedies originally introduced to the profession in this way; so, if for no other reason, it would ill become the physician to indiscriminately rail against them. To impress the lesson it is only necessary to mention Acetphenetidin, Sulphonmethane, Phenol Salicylate, and a host of others might be cited.

This is not to be construed as advocating proprietary medicines, and before adding any such remedy to his armamentarium the prescriber should know its value. Almost unlimited help can be derived from "New and Non-official Remedies" and "The Propaganda for Reform" of the *Journal of the A. M. A.*

The fact remains, however, that the more a physician knows of Materia Medica and the more he studies the Pharmacopœia and the National Formulary, the less frequently does he have to go outside of them for his prescription material. The detail man, to the student of Materia Medica, is often a source of valuable information. They frequently present new products of decided merit. The plea is not to avoid them, but to intelligently weigh their statements.

The prescriber should not be urged to confine himself to the standards, but to have intelligent reasons when he goes to other sources.

SPECIFYING MANUFACTURERS.

There is a tendency on the part of members of the medical profession to specify on prescriptions the preparation of some particular manufacturer. When there is any reasonable cause of advantage to the patient, there should be no hesitation in so doing, but the more familiar one becomes with medicines the more one becomes convinced that there is seldom a necessity for this practice. There was a time when it was frequently advisable, but the present State and National drug laws and the present status of pharmaceutical education have practically forced a uniformly high standard in manufacturing. Promiscuous specifying of special makes is usually a sign of ignorance or gullibility rather than of superior information. Another fact is that if a certain manufacturer puts out one preparation superior to that of competitors it is no indication that the other preparations of that make are above the average.

As a general rule it may be stated that in prescribing the agents included in the Pharmacopœia and National Formulary, it is best not to specify a particular make.

WRITE PRESCRIPTIONS.

A prescriber should avoid the habit of telling the patient what to get. The oldest friendship may not stand the strain. Even a physician often does not like to prescribe for himself, and when he consults a confrère prefers that he write a prescription.

A patient seldom consults a physician unless he, at least, imagines himself sick, and however slight his ailments he wants to be shown full consideration. If he is given medicine at all he appreciates his ailment being accorded the dignity of having a prescription written for it. Also nothing so encourages self-medication as telling the patient what to get, nothing is so apt to result in mistakes, and nothing so disgusts the doctor's friend and should-be supporter—the druggist.

An example will illustrate: A family sent for a physician to treat a child with earache. The physician, after a careful examination, told them to get an ounce of glycerin, put twenty drops of carbolic acid in it, shake it up and put two or three drops in the ear affected. It seemed to be the straw that broke the camel's back, for the family, who had employed him for years, sent for another physician who gave them the following prescription and retained the practice:

For Mary Jones (5 years).
℞
Phenolis Liq. ..... ♏xx
Glycerini .....q. s. f℥j
M.
Sig.—Use two (2) drops in ear as directed.

One doctor had lost a family's practice and another gained one, not through the latter's superior medical ability, but through his knowledge of human nature and the demands of his position.

The principle is not to be carried to extremes. For example: in prescribing a calomel purge to be followed next day by a saline, the prescriber can well write his prescription for the calomel, etc., and in his written instructions left with the patient instruct as to a dose of Epsom salt being taken the following morning.

It should always be remembered that it is hard to overestimate the psychic factor in the treatment of disease, and that while the prescription is a very commonplace scrap of paper to the prescriber, it is, to the patient, the ultimate expression of an oracle and is that which he feels is to stand between him and dread disease or even the Grim Reaper.

PRESCRIPTION BLANKS.

Prescriptions are written on everything from paper bags and scraps of wrapping paper on down—and up. Mohammed showed somewhat of the medical spirit in writing the Koran on pieces of bone and other waste material picked up in his wanderings.

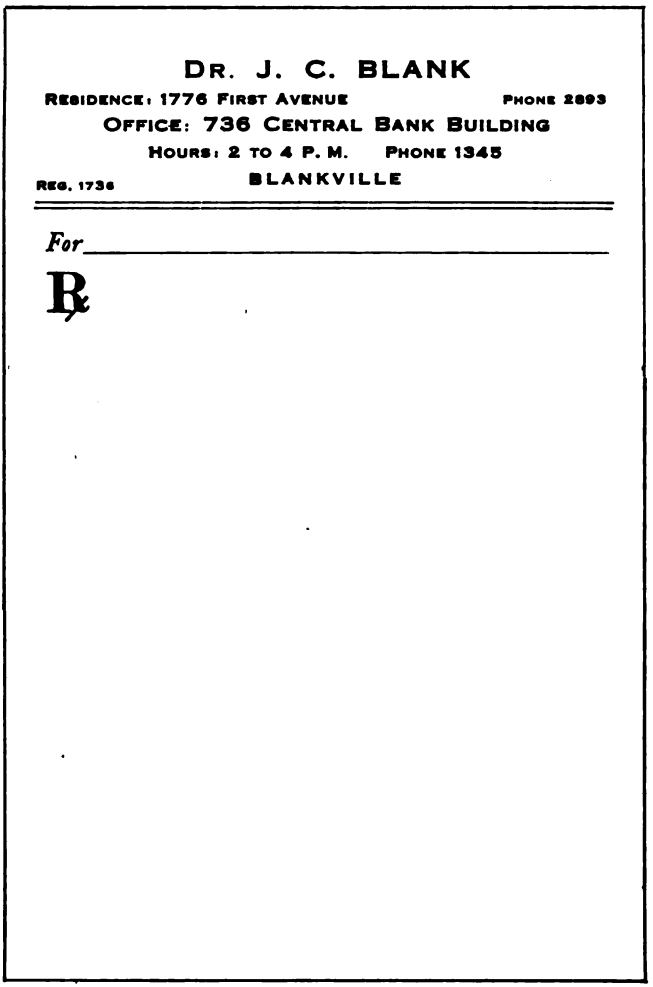
A prescription is the most important product of a dignified profession, and there is every reason why it should represent the acme of neatness.

A physician should use his own private prescription blanks, ordered and paid for by himself. The sheets should be of standard size (about 3½ x 5¼ inches), so that they will snugly fit in the regular box files so commonly used by pharmacists. If they are too small they do not present a neat appearance and are rather hard for the druggist to locate if it is necessary to refer to them again. If a blank is too large it may have to be folded to fit a box file, or if a druggist uses the wire files the sheets project beyond the edges of the others and are apt to get torn or become unreadable through handling and the usual accumulation of dust. The blank should be of good white paper, which is neater and more dignified, and shows the writing better than does a colored paper.

At the top of the blank should be, in modest type and black ink, the doctor's name and some information concerning him. It is not considered good taste to use the degrees, but the abbreviation *Dr.* followed by the name as the doctor uses it—that is, the full Christian name or part or only initials and surname. The home and office address, office hours, and home and office phone numbers should also be given, and the U. S. registry number, and usually nothing more. A blank arranged in this way enables the druggist to translate the prescriber's signature, to readily reach him should it be necessary, and serves the purpose to some extent of a business card. When instructions for the patient are left on these blanks, they constitute a modest, ethical advertisement, the purpose that is served by the blotter or calendar of the merchant. Something like the blank on the next page is recommended.

Now, the nice blanks so generously furnished by the friendly (?) druggist. If they did not bear the druggist's advertisement they would entail an obligation that should be avoided for many reasons; but free blanks usually bear some legend, as "Take this to the Avenue Pharmacy." The doctor in signing the blank makes printed instructions also a part of his order, and tells the patient to take the pre-

scription to that store, to the exclusion of all others. This is not only a gratuitous insult to the other druggists, but to the patient, as the choice of a druggist is a matter without the province of the physician, and he should not specify unless there are particular reasons,


DR. J. C. BLANK
RESIDENCE: 1776 FIRST AVENUE PHONE 2893
OFFICE: 736 CENTRAL BANK BUILDING
HOURS: 2 TO 4 P. M. PHONE 1345
REG. 1736 BLANKVILLE
For
℞

of interest to the patient, for his doing so, and then the patient has the right to know those reasons.

The standpoint of the other druggists and a frequent result are well shown in the following incident:

A young physician located in a suburban neighborhood with

five drug-stores. The active physicians doing practice in that section were using the blanks liberally supplied by two of those stores. If druggist *A* referred a patient to one of the old physicians, he either never heard of the case again or the patient returned with a prescription which carried instructions, "Take this to B's drug-store." The new man used his own blanks with the result that in a few months three druggists were referring all unattached patients to him and the other two stores were just about as friendly as if he had been using their blanks.

CARBON COPIES.

Prescription blanks should be securely bound in small books of about 50 sheets. It is better to have these wired at the top and perforated so that the sheets can be easily torn out. The books need not have covers, but should have a V back that will enable them to fit into a regular leather case. Every other sheet should be plain, colored paper for making a carbon copy. This will give twenty-five originals to each book. In lots of eighty books (2000 prescription blanks) they should not cost over about eight cents each.

There can be no reason against keeping carbon copies, and there are certainly many advantages. Twenty-five cents' worth of carbon paper will last almost any physician a year. A sheet is cut the size of the prescription blank and is merely transferred after each writing. One carbon sheet answers well for several books.

It is impossible for any physician to remember all that he prescribes, and a copy of all the prescriptions for a case filed with the other data is an invaluable record. Again, everyone makes mistakes, and the habit of rereading the copies after leaving each case, or at least at night, is a practice that cannot be too highly recommended. What physician has not spent many anxious moments, after leaving a case, wondering if he did not write *Corrosivi* instead of *Mitis* or some similar possibility? How easy it is to get peace of mind by referring to a carbon copy!

Referring to the copies of the day's prescriptions is also a valuable check on the day's work, and will frequently remind one of a consultation that might otherwise have gone uncharged.

In case of error on the part of the druggist the doctor has indisputable evidence as to what he wrote, no matter how the original may have been altered.

CARE OF COPIES AND OTHER USES FOR THEM.

If a physician uses a filing system (and all should) the copies of the prescriptions should be kept with the case history and other data. The most desirable filing system for this purpose is that which uses folders. A separate folder for each patient enables the physician to carry all matter regarding each case in the most convenient possible way. This data is probably best kept in the office.

The folder should be made for the history, etc., but if the physician contents himself, as many do, with a comparatively brief history, the prescription blank answers well by using one or more sheets. It is advisable to make a carbon duplicate of this also, and keep one in the office, and one can be kept in the study at home for reference, as in reading up on the case.

The blanks and copies answer well for keeping a record of matters of interest concerning the case, as pulse, temperature, etc., at each visit; also for blood-counts, urinalysis, etc., unless special forms are used. These should be filed as suggested for other data.

Some use the blanks for giving receipts for payments received during the day, and the carbon copy left in the book constitutes all the necessary data for making the proper credits when posting the day's work. Except in hospital work, written instructions for patient or nurse are best made on the regular blanks and copies filed with the other data.

COPIES TO A SUCCESSOR.

It frequently happens that a physician is called in a case of emergency to see the patient of another physician. He should always leave a copy of any prescription he may write and a memorandum of his findings, and instruct that they be given to the other physician when he next calls. This is not only a courtesy due to the other attendant, but justice to the patient, and of advantage to himself. The regular attendant coming in cannot well continue the use of a remedy without knowing what it is, and for him to abruptly discontinue the first physician's treatment subjects the patient to additional expense and may cause an unpleasant impression in the mind of the patient with regard to the treatment started by the first attendant.

CARE AS TO WRITING.

Few physicians are so fortunate as to be expert penmen, yet anyone can write neatly and plainly if he will devote the proper care

and time to the effort. It does not require a master of the art of penmanship to dot an *i* and cross a *t* and to make an *o* so that it can be distinguished from an *a* and a *u* from an *n* or *m*. A physician may have to hurry in giving a hypodermic or in applying forceps to an after-coming head, but it is seldom that he cannot take a reasonable time to write his prescriptions. Aside from other considerations, neatness in this will have a better moral effect upon both patient and pharmacist than will neatness in dress, which all regard as a matter of importance. Not only should the writing be plain and neat, but the sheet should be spotless. A soiled blank should be discarded and if one is damaged in writing or in removing from the book, it should be destroyed and the work done over. This also applies to errors in writing. A word should not be scratched or overwritten, but a new prescription be made.

ARRANGEMENT ON SHEET.

A prescriber can get a good idea of the effect of arrangement by studying the letters sent out by some of the up-to-date business houses. It will be noted that when the amount of reading matter is small it is placed about the middle of the sheet with equal margins above and below, instead of having the reading matter at the top of the sheet and the total margin below. It will also be noted that the margin on the left of the sheet is strictly observed and on the right as far as possible. The application of these rules to prescription writing is illustrated in Part III.

The lines should run straight across the page and the name of the drug and the amount should be on one line except under unusual circumstances, as when the name of the manufacturer is specified in parentheses, or some other descriptive information is given.

The amounts of the different ingredients ordered should be placed under each other and each on a line with the name of the drug to which it belongs.

PEN AND PENCIL.

Since a good fountain pen can be purchased at a nominal price, there is every reason why all prescriptions should be written in ink. It is much neater, more dignified, and the general appearance of the finished product is much better.

Carbon copies can be made as well as with a pencil. The writing is more durable and it is not so apt to become illegible through the prescription being carried in the pocket, getting wet, or being sub-

jected to the usual wear and tear of the frequent handling of the druggist's files. There is not the chance of an item being changed to cover an error of a prescription clerk. If ink is not used a good indelible pencil should be employed.

ORDER OF WRITING.

The date is first written, then the name of the patient and age. The superscription or heading (℞) should be printed on the blank. The names of the ingredients should then be written without amounts, except the vehicle, which is followed by the total amount of the prescription; then the directions to the compounder, then the directions to the patient, then the prescriber's signature. When this is complete the prescriber has before him the total amount of the preparation, the amount of each dose, and the number of doses; so he can better calculate the amounts of the active ingredients. These are filled in, beginning with the first and taking them in the order in which they are written.

REREADING.

After a prescription has been written it should be carefully reread, the amounts recalculated, and every part carefully reconsidered. It is best to allow some time to elapse between the writing and the rechecking. The best custom is to let all the matter remain in the book when first written and then, if with the patient, give attention to some other matters that will always require attention, then reread carefully each prescription or sheet of instructions as it is torn from the book. This custom possesses the additional advantage that if an error has been made the sheet can be quietly allowed to remain in the book, and a new one written without subjecting the prescriber to the possible embarrassment of acknowledging an error by destroying a prescription in the presence of the patient.

TELEPHONING PRESCRIPTIONS.

A fruitful source of unpleasant circumstances is the questionable custom of telephoning prescriptions. It is sometimes unavoidable, but should be done only when absolutely necessary. In case of error from any cause the burden of proof is on the prescriber to establish the fact that he really dictated what he claims. When it is positively necessary to telephone a prescription it should be first written just as if to be delivered in person; then with this before him the

prescriber should, after ascertaining that he is speaking to a prescription clerk, read it off carefully and slowly enough to admit of it being taken down in full; then the clerk should be asked to read what he has written, which the prescriber should recheck from the original. He should then either send by hand or mail, at once, the written prescription marked *original of prescription phoned.* The druggist should use this to replace the copy which he had filled and filed. The doctor as usual retains his carbon copy.

RECOMMENDING CREDIT.

The matter of financial arrangements between patient and druggists are best left to the parties most concerned. It is an unfortunate practice for the prescriber to take to the drug-store the prescriptions for parties unknown to the pharmacist and recommend that they be filled and charged. A like practice is to mark the prescription, when not taken in person, *O. K.* or *a/c O. K.* There are sometimes exceptional circumstances that would justify such action, but such is rarely the case. A refusal to recognize such recommendation is frequently embarrassing to the druggist, physician, and patient, and the prescriber should only make such suggestion when he intends to pay the account if the patient should not do so. The fact that the patient lives in a nice home and pays the bills of the physician, whom he likes and needs, is not always a certain indication that he will pay the pharmacist, whom he does not know or care about. The prescriber may feel that in recommending that the pharmacist extend credit for one little prescription the matter is small anyway, but the end result may be the opening up of an extensive account and considerable loss to the druggist. It is certain that this class of interference is usually unnecessary, undesired, and unappreciated.

NAMING A PRICE.

A prescriber will often be asked as to the probable price of the prescription. He should never be led into hazarding a guess. The knowledge that the same prescription cost a previous patient a certain amount is no ground for an answer. Each pharmacy is, to a large extent, a law unto itself as to price, and the same applies to even the different clerks in the same establishment. There necessarily can be no fixed price for prescriptions, as the variety of combinations runs into countless thousands. Each charge is an estimate and the same man may charge 35 cents for a mixture today and 40 cents tomorrow. The fluctuations of the market, the condition of

the customer, the character of the account, and many other factors enter into the fixing of the price. The druggist always marks the price charged on each prescription, so that if refilled a discrepancy will not occur. Where this practice is neglected the result is often unfortunate. If for particular reasons the prescriber should find it necessary to name a price to the patient, the amount should be plainly entered on the prescription and he should remember that he owes the pharmacist an explanation, as the doctor has no more right to dictate the price of filling than the druggist the price of prescribing. How oft, oh how oft, has every druggist asked a customer a dollar for a prescription, only to have him or her say, "Why, Doctor Blank said that only would cost me fifty cents!" The only recourse is to acknowledge himself a thief or discredit Dr. Blank's fund of information.

CHARITY.

It sometimes happens that prescriptions are written for parties not able to pay anything, or frequently the patient is deserving of some concession on the part of both doctor and druggist.

If the physician is rendering his services gratuitously and the condition of the patient justifies it, he may write, in the lower right-hand corner of the prescription, *Pp.* (meaning pauperismus—see page 347), which indicates to the druggist that the patient is in very reduced circumstances and that only a nominal charge, if any, should be made for the medicine. It should be remembered that this always carries the understanding that the medical attendant is receiving no remuneration whatever.

It sometimes happens that a family in modest circumstances may require considerable medical attention and medicine, that they are able and willing to pay something, but are deserving of leniency at the hands of all parties concerned. It is better under such circumstances for the physician to communicate with the pharmacist direct and discuss the circumstances in detail.

LOCAL PECULIARITIES.

In deciding what drugs to order for a patient it is frequently necessary to take into consideration what the local druggist can supply. This applies particularly to small towns and suburban neighborhoods. What may be a common remedy in one section of the country may be almost unused and not carried in stock in another. For example, the average village pharmacy might not be able to sup-

ply good fresh preparations of benzoinated lard, confection of rose, syrup of orange, etc., as these are seldom used in some sections, and do not keep very well.

In New Orleans many preparations that are in common use on account of the large French element might not be obtainable in other cities of a different character of population.

The point to be impressed is that a physician prescribing drugs that are not in common use should be reasonably sure that the druggist can supply them. If there is a doubt it is better for the prescriber to inform himself in the matter, as he may be able to save himself, the pharmacist, and the patient inconvenience or embarrassment.

REFILLING AND GIVING COPIES.

The custom among druggists is to refill, when requested, any prescription that does not specify to the contrary or to give a copy to be filled elsewhere. So general is this custom that it is demanded by the patient as a matter of right. An exception to the rule, of course, is in the case of those prescriptions that call for drugs that the laws of the Federal Government or of the particular State allow to be dispensed only once on a prescription, unless a written order to refill is given by the prescriber. Even when the law does not cover the point some few pharmacists will not refill a prescription calling for a habit-forming drug. Some prescribers write on prescriptions that they do not particularly want refilled, *Not to be refilled* or *Non. rep.* (see page 347). Others have this printed on all their blanks and only erase it when they think it will be necessary to have that particular prescription refilled. This latter custom is not recommended for reasons later explained.

Aside from other considerations the custom of refilling and giving copies is manifestly unjust to the physician, as he does not usually sell the patient a formula for present and future use for himself and friends. He is paid for his effort to correct a particular condition then existing, and his prescription is an order to the druggist to deliver a drug or drugs in a certain amount for that object. To refer to a previous illustration, the druggist has no more right to execute that order again than would the merchant to deliver a second pair of shoes on the order for one.

The custom is frequently even more unjust to the patient, as what would cure at one time might really do damage to the same patient or another at some other time, though the condition might seem to

be the same. An active purge for an abdominal pain due to constipation may give relief, but if taken when the pain is due to appendicitis it might produce unfortunate results. The illustration is used by another author of a lady who suffered from headache due to syphilis. Without being informed of the condition she was relieved by pills of yellow mercurous iodide. She later told her physician that she was so much pleased with the remedy that she had given copies of the prescription to all of her friends who suffered with headache.

It sometimes happens that for sentimental or other reasons a patient will wish to retain a particular prescription, as when consulting some eminent physician. The custom is for the patient to so state when giving the prescription to the druggist, who then fills the original and puts his name and his particular number and date on it, and sometimes the price charged in plain figures, or in a cipher code understood by most druggists. He makes a copy for himself, which he numbers, dates, and files as he would an original.

The custom of refilling and giving copies is too well established for the pharmacist to fail to comply with it, and the only remedy is for the prescriber to specify against it and try to educate the public to the many disadvantages. It is a matter, however, that requires concerted action, and for one doctor, particularly if he is not well established, to try to stem the tide of custom and popular demand might prove decidedly unfortunate.

ERRORS.

The prescriber who claims to never have made an error is one who disregards truth, has a poor memory, or has done very little practice indeed. The most earnest co-operation should exist between compounder and prescriber, and in case of a mistake by either the other should render all reasonable assistance. If a physician discovers that a prescription has not been properly compounded, he can always find a pretext for taking it back to the pharmacist without arousing the suspicions of the patient. When the prescriber makes a mistake it is the duty of the compounder to discover it and to protect against any injury to the reputation of the physician. If the physician can be reached, the prescription should be taken to him by the pharmacist or he may be telephoned. The prescription should never be returned to the patient or the patient be allowed to suspect that there is any trouble. If the physician is not accessible and his intention is obvious, the druggist may make the necessary cor-

rection and advise the physician at the earliest possible opportunity. For example:

℞
Hydrarg. Chlor. Corros. ..... gr. iv
Sacchari Lactis ..... gr. xx
M. ft. cht. no. iv.
Sig.—One every hour.

Any pharmacist should know that the mild mercurous chloride was intended, and should change the prescription if the physician cannot be reached.

The pharmacist is more apt to discharge his full duties in these matters than is the physician, and the point to be impressed is that the prescriber must remember that the compounder is his co-worker and entitled to every consideration at his hands, and that sooner or later that co-worker is apt to have an opportunity to repay any such debt with interest.

DOMESTIC MEASURES.

Liquid medicines are usually ordered to be administered in quantities familiar to the laity, as teaspoonful, tablespoonful, wineglassful, teacupful, glassful, etc. The prescriber bases his calculations on such equivalents as a teaspoonful being one fluidrachm, a tablespoonful being four fluidrachms, etc., as shown on page 331. As a matter of fact, there is a great variation in the size of these measures. The teaspoonful is probably the most uniform of any, yet they vary through a range of over a hundred per cent. and the shape is such that even this variation is increased in use. A spoon filled nearly to the top may not contain more than half the amount that could be measured into it. Dessertspoons vary in size to such an extent as to render their use inadvisable; the same applies to the wineglass. It is interesting to note the difference in a wineglassful of castor oil and a wineglassful of old port or Spanish sherry. The cup used by the coffee taker confined to one cup a day and the one used for measuring a disagreeable purgative water are very different vessels.

The medical attendant must either accustom himself to recognize spoons, glasses, etc., of the proper size and have them set aside for use in measuring medicines, or he must insist on graduated medicine glasses.

Graduated medicine glasses, if of the proper size and make, possess many advantages. They are not acted upon by the medicinal agent; they are easily cleaned; they are marked to hold correct

amounts; there is less discrepancy in filling a glass to a mark than in filling a spoon to the top; there is less chance for waste in administering from a partly filled glass than from a full spoon.

The lesson in domestic measures was very forcibly impressed upon the author in ordering a concentrated antiseptic solution with directions to use one teaspoonful of the medicine to two tablespoonfuls of water. The result was very distressing and it was found that the patient used a teaspoon holding about 90 minims for the medicine and a tablespoon holding about 120 minims for the water.

EXAMINING THE MEDICINE.

It is an excellent practice to examine the medicine the patient is taking on each visit after prescribing. This is particularly desirable on the first visit after starting treatment. The first object is to see that the medicine has been properly prepared. Even a physician without pharmaceutical experience can soon learn what should be the appearance of the remedy ordered. Unfortunately, it is a fact that the careful observer will frequently find cause to justify this practice. Gross errors and evident substitutions are not common, but frequently a powder has not been properly dissolved, an emulsion has been imperfectly made, a dusting powder is gritty, an ointment shows lack of proper incorporation, or a preparation has not been mixed in the order to obtain the best results.

A prescriber by seeing the finished product can best learn his own errors in combination and improve upon his work in that particular field. He sees that he is ordering quantities too large for capsules, that agents he thought would go well together are hopelessly incompatible, and he gets a better idea as to odor, taste, and general appearance of the remedies he is imposing upon a trusting public.

Another important object is to see that the patient is getting the proper amount of the remedy. If four fluidounces of a preparation is ordered and a teaspoonful is to be taken three times a day, and it is found that after five days only about a fourth of the preparation has been taken, something is wrong. Either the spoon is too small, is not being properly filled, or the regular number of doses is not being taken. If twelve capsules are ordered, and six are to be taken the first day, the next morning's visit should find only six remaining. It will be found that, among poorer patients particularly, the second visit will frequently find the prescription still unfilled, or, if the medicine is promptly obtained, that constant effort is sometimes necessary to secure for the patient the proper care as to the adminis-

tration of the remedies. Mothers are apt to humor children who object to unpleasant remedies. Men who are not sick enough to require a nurse are very apt to take a remedy only when there is pressing demand for it. And yet the neighbors, the family, and even the patient hold the physician responsible for the progress of the case, irrespective of all conditions.

OWNERSHIP OF A PRESCRIPTION.

When a prescription is written it is the property of the prescriber until he delivers it to the patient, or to the druggist for the patient; it then ceases to be his and he has no legal right to recall it. If the patient has the prescription it is his to do with as he chooses, and when it is delivered to the druggist to be filled it becomes and remains the property of the druggist. The patient cannot demand its return nor can the physician, and should a prescriber for any reason wish to regain possession of one of his prescriptions that has been filled, he should remember that he is to ask the druggist for the favor of its return and not demand it. It is the same proposition as if the doctor sent an order to a merchant to deliver to his servant a pair of shoes. The merchant should retain the order as his evidence of the transaction. Of course, the major object in the pharmacist retaining prescriptions is really that he may have them in case it is necessary to have them refilled.

STOCK PRESCRIPTIONS.

Most physicians have certain formulæ that they are in the habit of frequently employing. These are known as stock prescriptions. The practice is often carried to excess, but there can be no doubt that well-selected stock prescriptions are better than none at all. It is usually necessary for the medical attendant to write his prescriptions in the presence of the patient or family. The vast majority of cases will represent only a limited number of conditions, as tonsillitis, colds, intestinal intoxication, etc. There can be no objecton to the prescriber drilling himself in correctly writing one or more formulæ for each common demand. The matter of compatibility, taste, odor, appearance, etc., can be carefully worked out, and the dosage later adjusted to meet the demands of each particular case. The prescriber can often use these stock formulæ as a starting point and build his Materia Medica to them to better advantage than if he works at random. For example:

Quinine is the remedy for malaria. Let the physician work out a prescription, correct from every standpoint, for adminstering the drug in tasteless form to an adult that cannot take capsules; in a tasteless form to a child that cannot take capsules; in bitter solution, in capsules, and quinine tonics to meet the requirements of these patients after the first few days of intensive treatment.

Many teachers insist on learning "to use a drug"—certainly—but the prescriber should always stock his memory with facts as to how to order it for definite conditions, how to combine it, disguise its taste and odor if necessary, how and when to order it in liquid or solid form, and how to write the other details of the order.

STATE AND FEDERAL LAWS.

Every prescriber should familiarize himself with the laws of his State that particularly affect his profession. This applies especially to those restricting the sale or prescribing of alcoholics, poisons, narcotics, ergot, etc.

The Federal (Harrison) Narcotic Law is, in its effect, probably the greatest law ever enacted in the history of the world. None but those in a position to know can estimate the extent to which narcotics were used, the rapid progress of the scourge, and the utter ineffectiveness of State legislation.

The essentials of this law that are of particular interest to the prescriber are:

A physician must register with the Department of Internal Revenue and be assigned a number. This number must appear on his orders for drugs affected, and on his prescriptions calling for these drugs.

The drugs specified are Opium or Coca Leaves, or any preparation of them or derivative from them, or substitute, as Eucaine, Novacaine, etc.

It exempts those prepared remedies containing not over 2 grains of opium or 1 grain of codeine, or ¼ grain of morphine, or ⅛ grain heroine to the fluidounce if liquid, or avoirdupois ounce if solid. Certain external preparations are also exempted. Paregoric is the only U. S. P. preparation exempted.

The prescription for drugs included in the law must not only have the physician's registry number, but must show the name and address of the patient, and have the physician's signature.

When the amount of the drug is unusual, as in treating an addict

or a patient with an incurable disease, the prescription should carry a statement to that effect.

A physician is not allowed to prescribe these drugs to supply an addict, but only to treat disease.

A physician can administer these drugs to a patient he is attending (out of his office) without keeping a record, but if he leaves any of them to be administered in his absence he must keep a record of the amount of the drug, name and address of patient and date.

In office work where the physician is using very small amounts, he is permitted to merely keep a record of the date of purchase and date of exhaustion of his stock solutions.

This is not intended to serve as a working interpretation of the Harrison Narcotic Law, and is only the writer's personal understanding of those essentials now in force most affecting the prescribing of drugs. Every prescriber should secure a copy of the law from the Treasury Department and familiarize himself with its entire text.

It is certainly desirable to have the registry number printed on all prescription blanks.

INCOMPATIBILITY.

Incompatibility is a term used to express the condition where two or more agents when brought into contact result in a chemical decomposition, physical disassociation, or therapeutic opposition.

The various classes of incompatibility are grouped under three heads: chemical, physical (or pharmaceutical), and therapeutical (or physiological).

Excellent treatises on this important subject can be obtained. Some of them can hardly be improved upon for completeness, but the average student is apt to find difficulty in gleaning the actual necessities and becomes bewildered by the very completeness that to some is desirable.

As many of the phases of incompatibility are of minor interest to the prescriber, it will here only be treated under the following heads:

In Liquids.

I. Formation of a precipitate:
   (*a*) The separation of a metal or insoluble metallic salt by chemical action.
   (*b*) The separation of an alkaloid or insoluble alkaloidal salt by chemical action.

(*c*) Precipitation due to other causes.
II. The evolution of a gas.
III. Separation of an immiscible liquid.
IV. Formation of a gelatinous mass.
V. Incomplete solutions.
VI. Immiscibility.

In Solids.

I. Chemical changes.
II. Undesirable pharmaceutical mixtures.

I. Formation of a Precipitate.

(*a*) **The Separation of a Metal or Insoluble Metallic Salt by Chemical Action.**—It may be broadly stated that when two or more substances in solution are brought together, if by an exchange of radicals an insoluble substance can be formed or a gas evolved—that exchange will take place. The matter resolves itself, therefore, largely into a study of solubilities.

In ordering two or more solids in solution the prescriber must reason, "Are all soluble in the vehicle? Can an insoluble substance be formed from the bases and radicals used?"

For example:

Zinci Sulphatis ..... gr. x
Plumbi Acetatis ..... gr. x
Aquæ .....q. s. f℥iv

Is zinc sulphate soluble in water? Yes.

Is lead acetate soluble in water? Yes.

Can an insoluble substance be formed by an exchange of radicals? Yes; lead sulphate, which is insoluble, can be formed.

Will the exchange take place? Certainly.

Potassii Iodidi ..... ℥iv
Sodii Bromidi ..... ℥iv
Aquæ .....q. s. f℥iv

Is potassium iodide soluble in water? Yes.

Is sodium bromide soluble in water? Yes.

Can an insoluble substance be formed (or gas evolved) by an exchange of radicals? No. If potassium bromide and sodium iodide were formed they would still be soluble in water. Will an exchange take place? No.

A precipitate is not always undesirable, so this must be taken into consideration by the prescriber. The precipitate resulting in the following mixture does not spoil the value of the remedy:

Plumbi Acetatis,
Tincturæ Opii,
Aquæ ..... q. s.

The following would be undesirable:

Strychninæ Sulphatis ..... gr. j
Potassii Iodidi ..... ℥iv
Aquæ .....q. s. f℥iv

The matter of precipitation resulting from chemical action is often made to appear complicated by giving a large amount of information as to the solubilities of chemicals without sufficiently emphasizing the small part that is of practical importance.

Ammonium, Potassium, and Sodium.—The salts of these are soluble, so need cause no fear that they will be precipitated.

Lithium.—Soluble except the oxide and carbonate, which are sparingly soluble, and the phosphate, which is insoluble.

Magnesium.—Seldom prescribed in solution except the citrate and sulphate, which are freely soluble and usually not ordered with other chemicals.

The insoluble oxide is often ordered in suspension.

The acetate, chloride, citrate, iodide, nitrate, sulphate and sulphide are soluble; so care need be used only when prescribing with acids or salts that will form other combinations.

Calcium, Barium, Strontium.—Not often used in solution except the soluble calcium chloride, this being unassociated with other chemicals, and strontium bromide and iodide, which are soluble and are usually prescribed alone or with other bromides or iodides.

The important soluble salts are the acetates, bromides, chlorides, citrates, iodides, nitrates, and sulphides; so care should be used as to other combinations.

Zinc, Manganese, and Copper.—Seldom prescribed in solution except as follows;

Zinc as the soluble acetate, chloride, or sulphate, which are used alone or with other acetates, chlorides, or sulphates.

Manganese as potassium permanganate, which is soluble and not often used with other chemicals.

Copper as copper sulphate, which is soluble and used alone or with other sulphates.

The soluble salts of interest are the acetates, bromides, chlorides, citrates, iodides, nitrates, and sulphates; so care should be used where other combinations might be formed.

Mercury.—Seldom prescribed in solution except the soluble corrosive chloride or the red mercuric iodide, which are often ordered with potassium iodide in excess, forming the soluble potassiomercuric iodide. The corrosive chloride is also prescribed in solution with ammonium chloride or tartaric acid. Mercury is sometimes ordered in an insoluble form in water by prescribing the mild chloride or the corrosive chloride with lime-water.

Insoluble salts, as the salicylate, are sometimes used suspended in oil for hypodermic medication.

Mercuric acetate, bromide, chloride, citrate, nitrate, and sulphate are soluble. Mercurous salts are insoluble.

Iron.—With a few exceptions, iron salts are not often ordered in solution with active chemicals. The principal source of trouble is prescribing ferric salts with vegetable drugs containing tannic acid, when a dark-colored precipitate is formed. Salicylates also give a strong color reaction.

The tincture of ferric chloride is frequently prescribed with potassium chlorate with an excess of water and with the solution of potassium arsenite. The tendency is and should be to prescribe iron in dry form or, when given in solution, to use it alone. Exceptions to this are the iron hypophosphite and glycerophosphate in the compound preparations, and the scale salts as in the elixir of iron, quinine and strychnine, wine of iron, etc. The insoluble reduced iron is sometimes ordered with alkaloidal quinine suspended in a heavy syrup.

The more important soluble salts are the acetate, bromide, chloride, iodide, nitrate, sulphate; the scale salts—the citrate, soluble phosphate, pyrophosphate, iron and ammonium citrate, iron and ammonium tartrate, iron and potassium tartrate, iron and quinine citrate, soluble iron and quinine citrate, iron and strychnine citrate, and the double crystalline salt iron and ammonium sulphate. Particular care should be exercised against the formation of the insoluble hydroxide or carbonate.

Silver.—The nitrate is the only inorganic salt often used in solution, and should be employed alone or with nitric acid or some other nitrate.

Organic combinations, as argyrol, protargol, etc., are frequently used in solution, but are prescribed alone.

The nitrate and sulphate are soluble.

Lead.—Seldom prescribed in solution except as the acetate, which is not usually associated with other agents except the tincture of opium or zinc sulphate, the resulting precipitate to be suspended by shaking before using.

The acetate and nitrate are soluble.

Bismuth.—With the exception of the double salt, bismuth and ammonium citrate, none of the common salts of bismuth are soluble. They are frequently prescribed in liquids to be suspended by shaking when used.

Antimony.—The only salt of much interest to the prescriber for use in solution is the soluble double salt antimony and potassium tartrate. The quantity used is comparatively so small that it is not often a source of trouble from a chemical standpoint. The simple salts of antimony may be regarded as generally insoluble.

Arranged by Acids.

Acetates and Nitrates.—Generally soluble except bismuth subnitrate; so the prescriber need not worry about an acetate or nitrate being precipitated.

Bromides, Chlorides, and Iodides.—Generally soluble except silver, mercurous, lead, and bismuth; with these exceptions the prescriber need not expect a precipitate from the metallic agents in common use. It should be remembered that iodides and bromides precipitate alkaloidal salts.

Sulphates.—Generally soluble except barium, calcium, lead, and strontium.

Tartrates and Citrates.—Mostly soluble.

Lactates, Hypophosphites, and Nitrites.—Soluble or slightly soluble.

Arsenates.	**Borates.**	**Hydrates.**	**Oxalates.**
Arsenites.	**Carbonates.**	**Oxides.**	**Phosphates.**

These are mostly insoluble, or sparingly so, except those of ammonium, potassium, and sodium. Those of lithium are soluble or slightly soluble.

Salicylates.	**Sulphates.**	**Valerates.**

These salts that are in more common use are soluble, but they are seldom prescribed in solution with other chemicals. Mercury salicylate is insoluble and is often prescribed in suspension.

Tannates may be considered as generally insoluble, though the tannic acid in vegetable drugs is not a common source of trouble except with ferric and some alkaloidal salts.

(*b*) **Precipitation of Alkaloids and Alkaloidal Salts by Chemical Action.**—As a general rule alkaloids should not be prescribed with hydroxides, carbonates, iodine, iodides, bromides, borates, or tannic acid. The presence of glycerin or alcohol in sufficient percentage (10 to 50) will prevent precipitation in the majority of instances. With a few exceptions it is not often that a prescriber will want to combine an alkaloid with these chemicals.

The alkaloids in the various tinctures need seldom be considered as possible factors in precipitation.

Morphine or codeine may sometimes be desirable with the bromides. The hydrobromides of these are soluble; so these mixtures seldom precipitate.

Cocaine is sometimes ordered with boric acid or borates. The presence of glycerin will prevent precipitation.

Compound tincture of cinchona is prescribed with potassiomercuric iodide. The alcohol present prevents the precipitation of the small amount of quinine.

(*c*) **Precipitation Due to Other Causes.**—There are some instances of the precipitation of other than metallic and alkaloidal substances by chemical action, but they are seldom encountered in the regular course of prescription writing. Gelatinous precipitates will be treated elsewhere.

The majority of the trouble coming in this division of the subject results from adding to a solid in solution a liquid in which the solid is insoluble.

Gums.—These are soluble in water, but insoluble in alcohol. A most common instance is adding an alcoholic liquid to acacia in aqueous solution.

Resins.—These are soluble in alcohol, but insoluble in water. Common examples are adding aqueous liquids to tincture of asafetida, tincture of guaiac, tincture of myrrh, etc.

A large percentage of fluidextracts will precipitate either gums or resins when treated with a liquid of materially different alcoholic strength.

Among the drugs soluble in alcohol and insoluble or sparingly soluble in water are: acetanilide, acetphenetidin, benzoic acid, betanaphthol, camphor, monobromated camphor, iodine, menthol, methyl salicylate, phenyl salicylate, terpin hydrate, thymol, alkaloids.

Care should, therefore, be used in prescribing alcoholic solutions of these substances with aqueous liquids.

Salts, both of metals and alkaloids, are usually much more soluble in water than in alcohol.

Among those soluble in water and almost entirely insoluble in alcohol are: alum, tartar emetic, arsenic trioxide, double salts of iron, iron phosphate, iron sulphate, lithium citrate, magnesium sulphate, potassium bicarbonate, potassium carbonate, potassium chlorate, potassium citrate, potassium and sodium tartrate, sugar, milk sugar, sodium borate, sodium carbonate, sodium chloride, sodium citrate, sodium nitrite, sodium phosphate, sodium sulphate, zinc sulphate.

It should be remembered that considerable water can usually be added to an alcoholic solution or alcohol to an aqueous solution without precipitation.

II. Evolution of a Gas.

The most common instances are the evolution of carbon dioxide when a carbonate or bicarbonate and an acid or acid salt are brought together in solution. This action is often desirable either to give the patient a freshly formed salt or to have the agents dispensed in a liquid charged with carbonic acid.

Examples of intentional mixtures of this class are prescriptions for salicylic acid and sodium bicarbonate or the formulæ for the preparation of the solution of potassium citrate, solution of ammonium acetate, solution of magnesium citrate, seidlitz powders, etc.

A common example of the unintentional prescription of this class is ordering ammonium carbonate and syrup of squills.

Gas may be liberated with explosive violence when strong oxidizing and easily oxidizable substances are brought together.

Potassium chlorate should not be prescribed with easily oxidizable substances if trituration is necessary.

It should not be prescribed with sulphuric acid or with hydrochloric acid or glycerin except in the presence of considerable water.

Spirit of nitrous ether should not be prescribed with substances containing tannic acid, as undesirable nitric oxide gas is evolved.

Nitric acid should not be prescribed with glycerin or other easily oxidizable substances.

Sulphuric acid should not be prescribed with chlorates.

Glycerin should not be rubbed with dry oxidizing agents, as potassium chlorate, potassium permanganate, etc.

Iodine should not be prescribed with oil of turpentine in concentration. It should not be ordered with ammonia water (to make the

so-called colorless tincture of iodine), as explosions may occur after evaporation of the liquid.

Chromium trioxide is a strong, oxidizing agent. It is seldom used by the general practitioner. It should be used alone.

III. Separation of an Immiscible Liquid.

(*a*) **The Result of Chemical Action.**—The only common example of this is the separation of the oily chloral alcoholate when hydrated chloral is dissolved in a strongly alcoholic liquid.

(*b*) **Due to Physical Incompatibility.**—Most oils are readily soluble in or miscible with alcohol, and only sparingly so with water. When, therefore, an alcoholic solution of an oil has water added to it in sufficient quantity, more or less of the oil separates, producing, first, a cloudy or milky appearance, then collecting as a separate strata.

Alcoholic solutions that are particularly liable to this action are aromatic spirit of ammonia, spirit of orange, spirit of lemon, spirit of peppermint, spirit of camphor, camphorated tincture of opium, etc.

IV. Formation of a Gelatinous Mass.

The most common examples are: ordering phenol with collodion or albumin, or an aqueous solution of acacia with alcohol, ferric salts, or strong solutions of borates or lead subacetate.

V. Incomplete Solutions.

This constitutes one of the most common sources of trouble with which the pharmacist has to contend.

A physician may prescribe insoluble or sparingly soluble substances to be dissolved in liquid, as bismuth subnitrate in water.

Sometimes a moderately soluble substance is prescribed in excess, as in ordering for a 2-f℥ aqueous solution 1 3 of boric acid.

Sometimes too small an amount of the solvent is used, as wishing to give 2 grains of quinine hydrobromide in solution at a dose, to prescribe it 2 grains to the teaspoonful. The solvent should be increased so as to represent the two grains to two teaspoonfuls.

Often the wrong solvent is ordered, as prescribing alkaloidal or metallic salts in alcohol instead of aqueous liquids in which they are more soluble.

VI. Immiscibility.

The most common examples are prescribing oils with aqueous liquids.

Incompatibility in Solids.

I. Chemical Changes.—Dry medicinal agents are not so apt to undergo chemical changes and the possibility of such occurring need not often be a cause of apprehension. The following, however, may well be remembered:

Chemical changes may take place after the agents have been dissolved in the fluids of the intestinal tract; so drugs that in solution would form poisonous or inert compounds should not be prescribed together even in dry form. Examples are calomel and potassium bromide or silver nitrate and sodium chloride.

Agents apt to explode when rubbed together should not be prescribed, as potassium chlorate and tannic acid.

Certain salts when mixed with certain other agents liberate water of crystallization. The most common example is iron sulphate with alkaline carbonates.

II. Undesirable Pharmaceutical Mixtures.—Some drugs when mixed develop excessive moisture. The following should usually not be prescribed together in dry form:

Camphor, menthol, thymol, hydrated chloral, citric acid, sodium phosphate.

The above should not usually be prescribed in dry form with acetanilide, antipyrine, acetphenetidin, sodium salicylate, phenylsalicylate, resorcin, betanaphthol, diuretin, sulphonal, trional.

There are, of course, some minor exceptions in the foregoing.

In ointments, aqueous liquids should not be ordered with oily or fatty bases, as tincture of opium or solution of lead subacetate with petrolatum.

Therapeutic Incompatibility.

This is the condition resulting where agents are prescribed together that have an antagonistic therapeutic effect. The consideration of this belongs to the realm of therapeutics. Therapeutic incompatibility is not always undesirable. Where an agent affects several organs, another agent may be employed with it that modifies or counteracts its effect upon one or more of these parts and leaves its action on the others more or less uninfluenced. When an agent has two or more different actions, another agent may be employed with it that will modify or counteract one or more of these effects without materially interfering with its other action.

Atropine is often ordered with morphine or opium with calomel.

As general examples of therapeutic incompatibility might be mentioned prescribing stimulants with depressants, purgatives with astringents, etc.

Table of Relative Value of Weights and Measures.[1]

Weights, Old Form.	Metric Weight and Measure.	Measures, Old Form.	Weights, Old Form.	Metric Weight and Measure.	Measures, Old Form.
Grains.	Gm. or Mils.	Fluidounces and fractions.	Grains.	Gm. or Mils.	Fluidounces and fractions.
15432.4	1000	33.814	6845.9	443.606	15
14660.7	950	32.123	6389.5	414.032	14
14604.5	946.358	32	6172.9	400	13.526
14148.2	916.875	31	5933.1	384.458	13
13889.1	900	30.432	5476.7	354.884	12
13691.8	887.211	30	5401.3	350	11.835
13235.0	857.637	29	5020.3	325.311	11
13117.5	850	28.742	4629.7	300	10.144
12779.0	828.064	28	4563.9	295.737	10
12345.0	800	27.051	4107.5	266.163	9
12322.6	798.490	27	3858.1	250	8.453
11866.2	768.916	26	3651.1	236.590	8
11574.3	750	25.360	3194.7	207.016	7
11409.8	739.343	25	3086.5	200	6.763
10953.4	709.769	24	2738.4	177.442	6
10802.6	700	23.670	2314.9	150	5.072
10497.0	680.195	23	2282.0	147.869	5
10040.6	650.621	22	1929.0	125	4.227
9584.2	621.048	21	1825.5	118.285	4
9259.4	600	20.288	1543.2	100	3.381
9127.8	591.474	20	1388.9	90	3.043
8671.4	561.900	19	1369.2	88.721	3
8487.8	550	18.598	1234.6	80	2.705
8215.1	532.327	18	1157.4	75	2.536
7758.7	502.753	17	1080.3	70	2.367
7716.2	500	16.907	925.9	60	2.029
7302.3	473.179	16	912.8	59.147	2
7000.0	453.592	15.338	771.6	50	1.691
6944.6	450	15.216	617.3	40	1.353
		Minims.			Minims.
480	31.103	504.8	47.5	3.081	50
463	30	486.9	46.3	3	48.7
456.392	29.573	480	45	2.916	47.3
447.5	29	470.7	42.8	2.773	45
432.1	28	454.5	40	2.592	42.1
420	27.216	441.7	38.03	2.464	40
416.7	27	438.2	35	2.268	36.8
401.2	26	422	33.3	2.156	35
400	25.920	420.7	30.9	2	32.5
399.3	25.877	420	30	1.944	31.6
385.8	25	405.8	28.5	1.848	30
370.4	24	389.5	25	1.620	26.3
360	23.328	378.6	23.8	1.540	25
354.9	23	373.3	20	1.296	21.03
342.3	22.180	360	19.02	1.232	20
339.5	22	357.1	15.432	1	16.2
324.1	21	340.8	15.2	0.986	16

[1] Condensed from Remington's "Practice of Pharmacy."

TABLE OF RELATIVE VALUE OF WEIGHTS AND MEASURES.

Weights, Old Form.	Metric Weight and Measure.	Measures, Old Form.	Weights, Old Form.	Metric Weight and Measure.	Measures, Old Form.
Grains.	Gm. or Mils.	Minims.	Grains.	Gm. or Mils.	Minims.
308.6	20	324.6	15	0.972	15.8
300	19.440	315.5	14.3	0.924	15
293.2	19	308.4	14	0.907	14.7
285.2	18.483	300	13.3	0.863	14
277.8	18	292.2	13	0.842	13.7
262.4	17	275.9	12.4	0.801	13
246.9	16	259.7	12	0.778	12.6
240	15.552	252.4	11.6	0.75	12.2
231.5	15	243.4	11.4	0.739	12
228.2	14.787	240	11	0.713	11.6
216.1	14	227.2	10.5	0.678	11
200.6	13	211	10	0.648	10.5
185.2	12	194.8	9.5	0.616	10
180	11.664	189.3	9	0.583	9.5
171.1	11.090	180	8.6	0.555	9
169.8	11	178.5	8	0.518	8.4
154.3	10	162.3	7.7	0.5	8.1
138.9	9	146.1	7.6	0.493	8
123.5	8	129.8	7	0.454	7.4
120	7.776	126.2	6.7	0.431	7
114.1	7.393	120	6	0.389	6.3
108	7	113.6	5.7	0.370	6
100	6.480	105.2	5	0.324	5.3
92.6	6	97.4	4.8	0.308	5
90	5.832	94.7	4	0.259	4.2
80	5.184	84.1	3.8	0.246	4
77.2	5	81.2	3	0.194	3.2
70	4.536	73.6	2.9	0.185	3
61.7	4	64.9	2	0.130	2.1
60	3.888	63.1	1.9	0.123	2
57	3.697	60	1	0.065	1.0517
50	3.240	52.6	0.9508	0.06161	1

TABLE OF ABBREVIATIONS, WORDS, AND PHRASES.[1]

Word or Phrase.	Abbreviation.	Meaning.
Acerbus	.....	Sour
Ad	Ad	To, up to
Adde	.....	Add
Ad libitum	Ad lib.	At pleasure
Admove	Admov.	Apply
Agita	Agit.	Shake
Albus	Alb.	White
Alter	.....	The other
Alternis horis	.....	Every other hour

[1] Condensed from Remington's "Practice of Pharmacy."

TABLE OF ABBREVIATIONS, WORDS, AND PHRASES.

Word or Phrase.	Abbreviation.	Meaning.
Amplus	.....	Large
Ana	A., āā.	Of each
Ante	.....	Before
Aqua bulliens	Aq. bull.	Boiling water
Aqua communis	Aq. comm.	Common water
Aqua fervens	Aq. ferv.	Hot water
Aqua fluviatilis	Aq. fluv.	River-water
Aqua fontalis	Aq. font.	Spring-water
Aqua marina	Aq. mar.	Sea-water
Aqua pluviatilis	Aq. pluv.	Rain-water
Bene	.....	Well
Bibe	Bib.	Drink
Bis	.....	Twice
Bis in die	Bis in d.	Twice a day
Bolus	Bol.	A large pill
Bonus	.....	Good
Brevis	.....	Short
Bulliat, bulliant	Bull.	Let boil
Capiat	Cap.	Let him (or her) take
Caute	.....	Cautiously
Charta	Chart.	Paper
Charta cerata	Chart. cerat.	Waxed paper
Chartula	.....	Small paper
Cibus	C.	Food
Cochlear or cochleare	Coch.	A spoonful
Cochleare amplum	Coch. amp.	A tablespoonful
Cochleare medium	Coch. med.	A dessertspoonful (about 2 fluidrachms)
Cochleare parvum	Coch. parv.	A teaspoonful (about 1 fluidrachm)
Coctio	Coct.	Boiling
Cola	Col.	Strain
Colentur	Colent.	Let them be strained
Coletur	Colet.	Let it be strained
Collutorium	Collut.	A mouth-wash
Collyrium	Collyr., Coll.	An eye-wash
Confectio	Conf.	Confection
Congius	Cong.	A gallon
Contere	.....	Rub together
Contra	.....	Against
Coque	Coq.	Boil
Cortex	Cort.	The bark
Cras, Crastinus	Crast.	Tomorrow
Cum	C.	With
Decanta	Dec.	Pour off
Decem	.....	Ten
Decubitus	Decub.	Lying down
Diebus alternis	Dieb. alt.	Every other day
Diebus tertiis	Dieb. tert.	Every third day
Dilue, Dilutus	Dil.	Dilute (thou), diluted
Dividatur in partes æquales	D. in p. æq.	Let it be divided into equal parts
Dividendus	.....	To be divided
Dolor	.....	Pain
Donec	.....	Until

TABLE OF ABBREVIATIONS, WORDS, AND PHRASES.

Word or Phrase.	Abbreviation.	Meaning.
Electuarium	Elect.	An electuary
Enema	.....	An enema, a clyster
Et	.....	And
Extend	.....	Spread
Fac, fiat, fiant	F., ft.	Make
Febris	.....	Fever
Fiat cataplasma	Ft. cataplasm.	Make a poultice
Fiat emulsio	Ft. emuls.	Make an emulsion
Fiat gargarisma	Ft. garg.	Make a gargle
Fiat massa	Ft. massa	Make a mass
Fiat mistura	Ft. mist.	Make a mixture
Fiat pulvis	Ft. pulv.	Make a powder
Fiat secundum artis regulas	F. s. a. r.	Let it be made according to the rules of art.
Fiat solutio	Ft. solut.	Make a solution
Fiat suppositorium	Ft. suppos.	Make a suppository
Fiat unguentum	Ft. ung.	Make an ointment
Filtra	.....	Filter
Flavus	Flav.	Yellow
Folius	Fol.	A leaf
Gargarisma	Garg.	A gargle
Gratus	.....	Pleasant
Gutta	Gtt.	A drop
Haustus	Haust.	A draught
Herba	.....	An herb
Hora	H.	An hour
Hora decubitus	H. d.	At the hour of going to bed
Hora somni	H. s. or Hor. som.	Just before going to sleep
Idem	.....	The same
In dies	In d.; i. d.	From day to day. Daily
Injectio	.....	An injection
Inter	.....	Between
Involve gelatina	.....	Coat with gelatin
Lac	.....	Milk
Magnus	Mag.	Large
Mane	.....	In the morning
Massa	.....	A mass
Minimum	M. or Min.	A minim
Misce	M.	Mix
Ne tradas sine nummo	Ne tr. s. num.	Do not deliver unless paid
Non	.....	Not
Non repetatur	Non. rep.	Do not repeat
Numerus	No.	Number
Octarius	O.	A pint
Omni hora	Omn. hora	Every hour
Omni mane	.....	Every morning
Omni nocte	.....	Every night
Ovum	.....	An egg
Pabulum	.....	Food. Nourishment
Panis	.....	Bread
Pars, partis	.....	A part
Partes æquales	P. æ.	Equal parts
Parvus	.....	Little
Pectus	.....	The breast
Pes	.....	The foot

TABLE OF ABBREVIATIONS, WORDS, AND PHRASES.

Word or Phrase.	Abbreviation.	Meaning.
Placebo	.....	To please, satisfy
Pondere	P.	By weight
Pone aurem	.....	Behind the ear
Post cibo	P. c.	After eating
Potus	.....	Drink
Primus	.....	The first
Pro re nata	P. r. n.	Occasionally
Pulvis, Pulverizatus	Pulv.	A powder, powdered
Quantum sufficiat	Q. s.	As much as is sufficient
Quaque	Q., q.	Each or every
Quaque hora	Q. h.	Each hour
Quartus	.....	Fourth
Quater	.....	Four times
Quinque	.....	Five
Quintus	.....	The fifth
Recipe	℞	Take
Repetatur	Rept.	Let it be repeated.
Repetantur	Rept.	Let them be repeated.
Secundum artem	S. a.	According to art
Secundus	.....	Second
Semis	Ss.	A half
Septem	.....	Seven
Sex	.....	Six
Sextus	.....	Sixth
Siccus	.....	Dry. Dried
Signa	Sig.	Mark thou
Simul	.....	Together
Sine	.....	Without
Sit	.....	Let it be
Solve	.....	Dissolve
Somnus	.....	Sleep
Spissus	.....	Dense, hard
Subinde	.....	When the boiling is nearly finished.
Succus	.....	Juice, sap
Supra	.....	Above
Talis	.....	Such, like this
Ter	.....	Three times
Tere	Ter.	Rub
Ter in die, or Ter die	T. i. d., or T. d.	Three times a day
Tertius	.....	Third
Tres	.....	Three
Tritura	Trit.	Triturate
Ubi	.....	Where, whenever
Una	.....	Together
Uncia	.....	An ounce
Unguilla	.....	An ointment box
Ut dictum	Ut dict.	As directed
Veniculum	.....	A vehicle
Vel	V.	Or
Verus	.....	True, genuine
Vitellus	.....	Yolk

TABLE EXHIBITING THE NUMBER OF DROPS IN A FLUIDRACHM OF DIFFERENT LIQUIDS, WITH THE WEIGHT IN GRAINS AND GRAMMES.[1]

Name	Drops in ʒj (60 m.)	Weight of ʒj	
		in gr.	in Gm.
Acetum Opii	90	61	3.95
Sanguinariæ	78	55½	3.59
Scillæ	68	57	3.69
Acidum Aceticum	108	58	3.75
Aceticum Dilutum	68	55	3.56
Carbolicum	111	59	3.82
Hydrochloricum	70	65	4.21
Hydrochlor. Dilutum	60	56	3.62
Hydrocyanicum Dil.	60	54	3.49
Lacticum	111	66	4.27
Nitricum	102	77	4.98
Nitricum Dilutum	60	58	3.62
Nitrohydrochloricum.	76	66	4.27
Phosphoricum Dil.	59	57	3.69
Sulphuricum	128	101	6.54
Sulphuricum Aromat.	146	53	3.43
Sulphuricum Dilutum	60	58½	3.79
Sulphurosum	59	55	3.56
Æther	176	39	2.52
Alcohol	146	44	2.85
Dilutum	137	49	3.17
Aqua	60	55	3.56
Ammoniæ Fortior	66	50	3.24
Destillata	60	53½	3.46
Balsamum Peruvianum	101	60	3.88
Bromum	250	165	10.69
Chloroformum	250	80	5.18
Copaiba	110	51	3.30
Creosotum	122	56½	3.66
Fluidextract. Belladon.	156	57	3.69
Buchu	150	47½	3.07
Cimicifugæ	147	48	3.11
Cinchonæ	138	58	3.75
Colchici Radicis	160	57	3.69
Colchici Seminis	158	55	3.56
Conii	137	61	3.95
Digitalis	134	62	4.01
Ergotæ	138	60	3.88
Gelsemii	149	49	3.14
Glycyrrhizæ	133	61	3.95
Hyoscyami	160	59	3.82
Ipecacuanhæ	120	60	3.88
Pareiræ	140	57	3.72
Rhei	158	61	3.95
Sarsaparillæ Comp.	134	60	3.88
Senegæ	137	62	4.01
Serpentariæ	148	47	3.07
Uvæ Ursi	137	60	3.88
Valerianæ	150	49	3.17
Veratri Viridis	150	50	3.24
Zingiberis	142	48	3.11
Glycerinum	67	68	4.40
Hydrargyrum	150	760	49.24
Liquor Acidi Arsenosi	75	56	3.62
Ammonii Acetatis	57	55	3.56
Arseni et Hydrargyri Iodidi	58	55	3.56
Ferri Chloridi	71	72	4.66
Ferri Citratis	71	72	4.66
Ferri Nitratis	59	59	3.82
Ferri Subsulphatis	73	83	5.37
Ferri Tersulphatis	83	72	4.66
Liquor Hydrarg. Nit.	131	123	7.97
Iodi Compositus	63	59	3.82
Plumbi Subacetatis	74	70	4.53
Potass. Hydroxidi	62	58	3.75
Potassii Arsenitis	57	55	3.56
Sodæ Chlorinatæ	63	62	4.01
Zinci Chloridi	89	88	5.70
Oleoresina Aspidii	130	52	3.36
Capsici	120	51	3.30
Cubebæ	123	52	3.36
Oleum Æthereum	125	50	3.24
Amygdalæ Amaræ	115	55	3.56
Amygdalæ Expres.	108	48½	3.14
Anisi	119	54	3.49
Bergamottæ	130	46	2.98
Cari	132	50	3.24
Caryophylli	130	57	3.69
Cinnamomi	126	53½	3.46
Copaibæ	123	49½	3.20
Cubebæ	125	51	3.30
Fœniculi	125	53	3.43
Gaultheriæ	125	62	4.01
Juniperi	148	49	3.17
Lavandulæ	138	52	3.36
Limonis	129	47	3.04
Menthæ Piperitæ	129	50	3.24
Ricini	77	51½	3.33
Rosæ	132	47	3.04
Rosmarini	143	50	3.24
Sassafras	133	58	3.75
Terebinthinæ	136	45½	2.94
Tiglii	104	50	3.24
Spiritus Æther. Comp.	148	45	2.91
Ætheris Nitrosi	146	47	3.04
Ammoniæ Aromat.	142	48	3.11
Camphoræ	143	47	3.04
Chloroformi	150	48	3.11
Menthæ Piperitæ	142	47	3.04
Syrupus	65	72	4.66
Acaciæ	44	73	4.73
Ferri Iodidi	65	77	4.98
Scillæ	75	74	4.79
Scillæ Compositus	102	70	4.53
Senegæ	106	70	4.53
Tinctura Aconiti	146	46	2.98
Belladonnæ Fol.	137	53	3.43
Benzoini Composita.	148	48	3.11
Cantharidis	131	51	3.33
Cinchonæ Comp.	140	49	3.17
Digitalis	128	53	3.43
Ferri Chloridi	150	53	3.43
Iodi	148	47	3.04
Nucis Vomicæ	140	44	2.85
Opii	130	53	3.43
Opii Camphorata	130	52	3.36
Opii Deodorati	110	54	3.49
Valerianæ	130	52	3.36
Veratri	145	46	2.98
Zingiberis	144	46	2.98
Vin. Colchici Radicis	107	55	3.56
Colchici Seminis	111	54	3.49
Opii	100	55	3.56

[1] Remington's "Practice of Pharmacy."

Table of the Solubility of Official Substances in Water and in Alcohol.

Abbreviations: s. = soluble; ins. = insoluble; sp. = sparingly; v. s. = very soluble; alm. = almost; dec. = decomposed; r. s. = readily soluble; p. s. = partially soluble.

One Part is Soluble	In Water At 25° C. (77° F.) *Parts*	In Alcohol At 25° C. (77° F.) *Parts*
Acetanilidum	190	3.4
Acetphenetidinum	1310	15
Acidum Benzoicum	275	2.3
Boricum	18	18
Citricum	0.5	1.8
Gallicum	87	4.6
Phenylcinchoninicum	ins.	sp.
Salicylicum	460	2.7
Stearicum	ins.	21
Tannicum	v. s.	v. s.
Tartaricum	0.75	3.3
Trichloraceticum	v. s.	v. s.
Aconitina	3200	28
Adeps	ins.	v. sp.
Æthylis Carbamas	v. s.	0.8
Æthylmorphinæ Hydrochloridum	8	22
Agar	ins.	ins.
Aloinum	65	10.75
Alumen	7.2	ins.
Exsiccatum	20	ins.
Alumini Hydroxidum	ins.	ins.
Ammonii Benzoas	10	35.5
Bromidum	1.3	12
Carbonas	4	dec.
Chloridum	2.6	100
Iodidum	0.6	3.7
Salicylas	1	3
Valeras	v. s.	v. s.
Antimonii et Potassii Tartras	12	ins.
Antipyrina	v. s.	1.3
Apomorphinæ Hydrochloridum	50	50
Argenti Nitras	0.4	30
Nitras Fusus	0.4	30
Oxidum	v. sp.	ins.
Arseni Iodidum	12	5
Trioxidum	30-100	sp.
Atropina	455	2
Atropinæ Sulphas	0.4	5
Auri et Sodii Chloridum	v. s.	v. s.
Benzinum Purificatum	ins.	v. s.
Benzosulphinidum	290	31
Betaeucainæ Hydrochloridum	30	35
Betanaphthol	1000	0.8
Bismuthi Betanaphtholas	alm. ins.	alm. ins.
et Ammonii Citras	v. s.	sp.
Subcarbonas	ins.	ins.
Subgallas	ins.	ins.
Subnitras	alm. ins.	alm. ins.
Subsalicylas	alm. ins.	—
Bromoformum	v. sp.	v. s.

SOLUBILITY OF OFFICIAL SUBSTANCES IN WATER AND IN ALCOHOL—*Continued.*

One Part is Soluble	In Water At 25° C. (77° F.) *Parts*	In Alcohol At 25° C. (77° F.) *Parts*
Caffeina	46	66
Citrata	v. s.	—
Caffeinæ Sodio-benzoas	1.1	30
Calcii Bromidum	0.7	1.3
Carbonas Præcipitatus	alm. ins.	ins.
Chloridum	0.62	10
Glycerophosphas	50	ins.
Hypophosphis	6.5	ins.
Lactas	20	alm. ins.
Sulphidum Crudum	v. sp.	ins.
Calx	840	ins.
Chlorinata	p. s.	p. s.
Camphora	v. sp.	r. s.
Monobromata	alm. ins.	6.5
Cerii Oxalas	ins.	ins.
Cetaceum	ins.	alm. ins.
Chloralum Hydratum	v. s.	v. s.
Chromii Trioxidum	v. s.	dec.
Chrysarobinum	v. sp.	385
Cinchonidinæ Sulphas	65	90
Cinchonæ Sulphas	60	12.5
Cocaina	600	6.5
Cocainæ Hydrochloridum	0.4	3.2
Codeina	120	2
Codeinæ Phosphas	2.3	325
Sulphas	30	1280
Colchicina	22	v. s.
Cotarninæ Hydrochloridum	v. s.	v. s.
Creosoti Carbonas	ins.	v. s.
Creta Præparata	alm. ins.	ins.
Cupri Sulphas	2.5	500
Diacetylmorphina	1700	31
Diacetylmorphinæ Hydrochloridum	2	5
Elaterium	ins.	325
Emetinæ Hydrochloridum	v. s.	v. s.
Ferri Chloridum	v. s.	v. s.
et Ammonii Citras	r. s.	ins.
et Quininæ Citras	r. s.	p. s.
Phosphas	v. s.	ins.
Sulphas	1.4	ins.
Exsiccatus	1.4	ins.
Granulatus	1.4	ins.
Ferrum Reductum	ins.	ins.
Gelatinum	ins.	ins.
Glycyrrhizinum Ammoniatum	r. s.	r. s.
Guaiacol	53	v. s.
Guaiacolis Carbonas	ins.	60
Hexamethylenamina	1.5	12.5
Homatropinæ Hydrobromidum	6	40
Hydrargyri Chloridum Corrosivum	13.5	3.8
Chloridum Mite	ins.	ins.
Iodidum Flavum	alm. ins.	ins.
Rubrum	alm. ins.	115
Oxidum Flavum	alm. ins.	ins.
Rubrum	alm. ins.	ins.
Salicylas	alm. ins.	alm. ins.

SOLUBILITY OF OFFICIAL SUBSTANCES IN WATER AND IN ALCOHOL—*Continued.*

One Part is Soluble	In Water At 25° C. (77° F.)	In Alcohol At 25° C. (77° F.)
	Parts	*Parts*
Hydrargyrum Ammoniatum	ins.	ins.
Hydrastina	alm. ins.	170
Hydrastinæ Hydrochloridum	v. s.	v. s.
Hydrastininæ Hydrochloridum	v. s.	v. s.
Hyoscyaminæ Hydrobromidum	v. s.	2.5
Iodoformum	alm. ins.	60
Iodum	2950	12.5
Lithii Bromidum	0.6	v. s.
Carbonas	78	alm. ins.
Citras	1.4	alm. ins.
Magnesii Carbonas	ins.	ins.
Oxidum	alm. ins.	ins.
Ponderosum	alm. ins.	ins.
Sulphas	1	alm. ins.
Mangani Dioxidum Præcipitatum	ins.	ins.
Menthol	sp. s.	v. s.
Methylis Salicylas	sp. s.	v. s.
Methylthioninæ Hydrochloridum	r. s.	r. s.
Morphina	3340	210
Morphinæ Hydrochloridum	17.5	52
Sulphas	15.5	565
Paraffinum	ins.	ins.
Paraldehydum	8	v. s.
Pelletierinæ Tannas	240	16
Pepsinum	50	alm. ins.
Phenol	15	v. s.
Liquefactum	12	—
Phenolphthaleinum	13	alm. ins.
Phenylis Salicylas	6670	6
Phosphorus	alm. ins.	—
Physostigminæ Salicylas	75	16
Pilocarpinæ Hydrochloridum	0.3	3
Nitras	4	75
Plumbi Acetas	1.4	38
Oxidum	alm. ins.	ins.
Potassii Acetas	0.5	2.9
Bicarbonas	2.8	alm. ins.
Bitartras	155	v. sp.
Bromidum	1.5	250
Carbonas	0.9	ins.
Chloras	11.5	alm. ins.
Citras	0.6	alm. ins.
et Sodii Tartras	0.9	alm. ins.
Hydroxidum	0.9	3
Hypophosphis	0.6	9
Iodidum	0.7	22
Nitras	2.8	620
Permanganas	13.5	dec.
Pyrogallol	1.7	1.3
Quinina	1560	0.8
Quininæ Bisulphas	9	23
Dihydrochloridum	0.6	12
et Ureæ Hydrochloridum	0.9	2.4
Hydrobromidum	40	0.9
Hydrochloridum	18	0.8

SOLUBILITY OF OFFICIAL SUBSTANCES IN WATER AND IN ALCOHOL—*Continued.*

One Part is Soluble	In Water At 25° C. (77° F.)	In Alcohol At 25° C. (77° F.)
	Parts	*Parts*
Quininæ Salicylas	77	14
Sulphas	725	107
Tannas	sp.	sp.
Resorcinol	0.9	0.9
Saccharum	0.5	170
Lactis	4.9	alm. ins.
Salicinum	23.5	88.5
Santoninum	5300	43
Scopolaminæ Hydrobromidum	1.5	20
Sevum Præparatum	ins.	ins.
Sodii Acetas	0.8	19
Arsenas	1.5	v. sp.
Exsiccatus	3.1	v. sp.
Benzoas	1.8	61
Benzosulphinidum	1.2	50
Bicarbonas	10	ins.
Boras	15	ins.
Bromidum	1.1	16
Cacodylas	0.5	2.5
Carbonas Monohydratus	3	ins.
Chloridum	2.8	alm. ins.
Citras	1.3	ins.
Cyanidum	v. s.	—
Glycerophosphas	v. s.	alm. ins.
Hydroxidum	0.9	v. s.
Hypophosphis	1	s.
Indigotindisulphonas	v. sp.	alm. ins.
Iodidum	0.55	2
Nitris	1.5	sp.
Perboras	s.	—
Phenolsulphonas	4.2	140
Phosphas	2.7	ins.
Exsiccatus	8.1	ins.
Salicylas	0.9	9.2
Sulphas	1 +	ins.
Sulphis Exsiccatus	3.2	sp.
Thiosulphas	0.5	ins.
Sparteinæ Sulphas	1.1	3
Strontii Bromidum	0.35	r. s.
Iodidum	0.2	s.
Salicylas	19	61
Strophanthinum	v. s.	s.
Strychnina	6420	136
Strychninæ Nitras	42	150
Sulphas	32	81
Sulphonethylmethanum	200	r. s.
Sulphonmethanum	365	60
Sulphur Lotum	ins.	alm. ins.
Præcipitatum	ins.	alm. ins.
Sublimatum	ins.	alm. ins.
Terebenum	sp.	3
Terpini Hydras	200	13
Theobrominæ Sodio-salicylas	1	sp.
Theophyllina	100	80
Thymol	1010	1

SOLUBILITY OF OFFICIAL SUBSTANCES IN WATER AND IN ALCOHOL—*Concluded.*

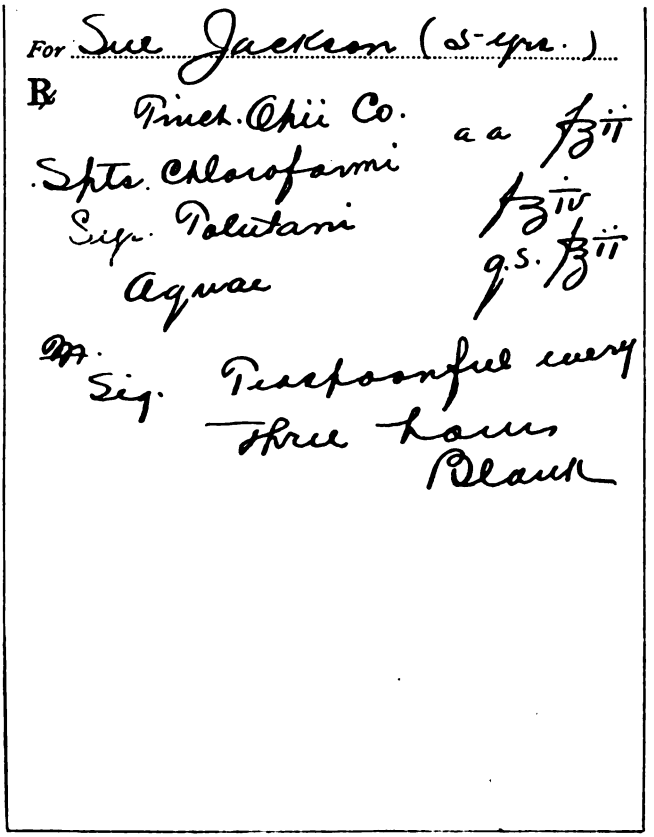
One Part is Soluble	In Water At 25° C. (77° F.) *Parts*	In Alcohol At 25° C. (77° F.) *Parts*
Thymolis Iodidum	ins.	sp.
Trinitrophenol	78	12
Uranii Nitras	1.2	v. s.
Vanillinum	100	r. s.
Veratrina	1760	2.8
Zinci Acetas	2.3	30
Carbonas Præcipitatus	ins.	ins.
Chloridum	0.25	1.3
Oxidum	ins.	ins.
Phenolsulphonas	1.6	1.8
Stearas	ins.	ins.
Sulphas	0.6	ins.
Valeras	70	22

INTRODUCTION TO PART III.

In the following pages, fifty prescriptions are given so arranged as to illustrate the common errors of prescription writing. In each instance, also, the same prescription is shown, written just as it should be for delivery to the pharmacist. These prescriptions are selected from many thousands, and the intention is not only to point out pitfalls to the prescriber, but to give formulæ of therapeutic merit; to offer (with due apologies) a substantial formulary of stock prescriptions with the hope that the students in this important field may daily build to this modest foundation, carefully working out every detail of each addition, until they are able to meet any emergency with all credit.

It is earnestly urged that the student read each incorrect prescription with the criticisms and then try to write it correctly, afterward comparing his finished product with the correct copy given.

Prescribed for a persistent cough with slight or no evident lesions.



General arrangement is imperfect.

Tincture of opium compound is not the proper name for the remedy wanted.

Spts. is not considered a good abbreviation for Spiritus.

The camphor and oil of anise in the paregoric, and the chloroform in the spirit of chloroform, would be thrown out of solution.

Final *i* is best made *j* in numerals.

For Sue Jackson (5 yrs)

℞

Tinct. Opii Camph.,

Spir. Chloroformi, āā.. ℥ij

Syr. Tolutani, ℥iv

Aquae, q.s. ad ℥iij

M.

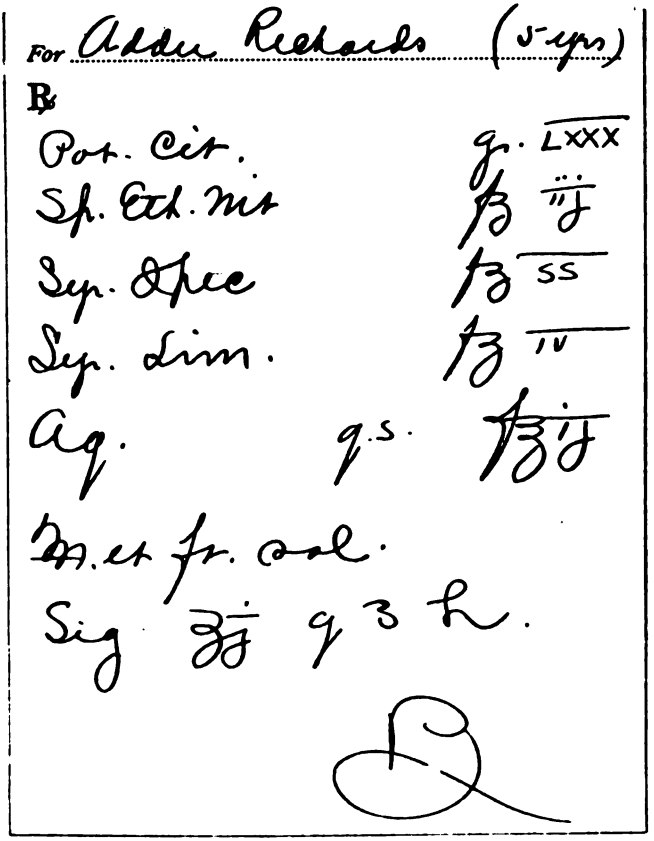
Sig.- Teaspoonful every three hours when awake.

Blank

Note the expression "when awake." Directions are usually understood to either mean during the day or during the entire twenty-four hours, regardless. Many do not approve of waking patients for medicine except under pressing circumstances, but these directions instruct a dose to be given when the little patient is awakened by a paroxysm of coughing.

Sodium bromide is often a good addition to this preparation.

For a "dry" cough with some bronchial involvement and fever.

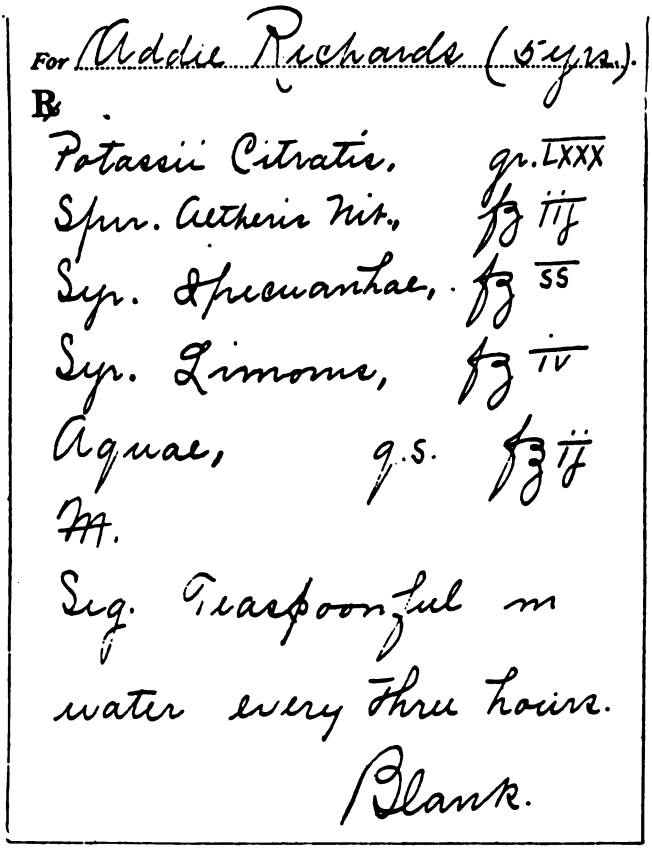


Compare the appearance of the short abbreviations with more complete writing.

Ether is not the correct writing of the official word.

It is unnecessary to instruct the druggist to make a solution; he could not make anything else by mixing these ingredients.

What would the patient think if the druggist carried out his orders and wrote the above directions on the label?


For Addie Richards (5 yrs.).

℞

Potassii Citratis, gr. LXXX

Spir. Aetheris Nit., ℥ iij

Syr. Ipecacuanhae, ℥ ss

Syr. Limonis, ℥ iv

Aquae, q.s. ad ℥ ij

M.

Sig. Teaspoonful in water every three hours.

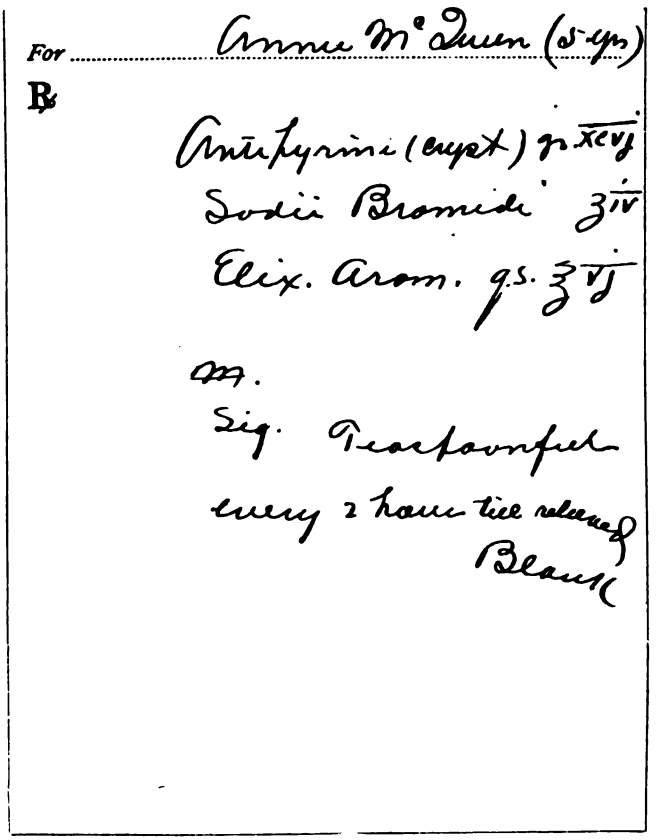
Blank.

As this is an expectorant mixture it is not often indicated unless the child is old enough to expectorate.

The spirit of nitrous ether is often omitted if there is no fever.

Even a small dose of ipecac will frequently cause nausea; so the prescriber should be on his guard.

Frequently used during the paroxysmal stage of whooping-cough.



Margins should be observed.

Antipyrine does not have the genitive ending *i*. It only comes in crystalline form.

The aromatic elixir would appear better written more completely, as the name above it is long.

The character ʒ calls for weight and not volume.

The total quantity is too much for this class of remedy.

For Anne W. McQueen (5 yrs.).

℞

Antipyrinae, gr. XXX

Sodii Bromidi, gr. LXXX

Elix. Aromatici, q.s. ℥ij

M.

Sig.

Teaspoonful every two hours until relieved.

Non. rep. Blank.

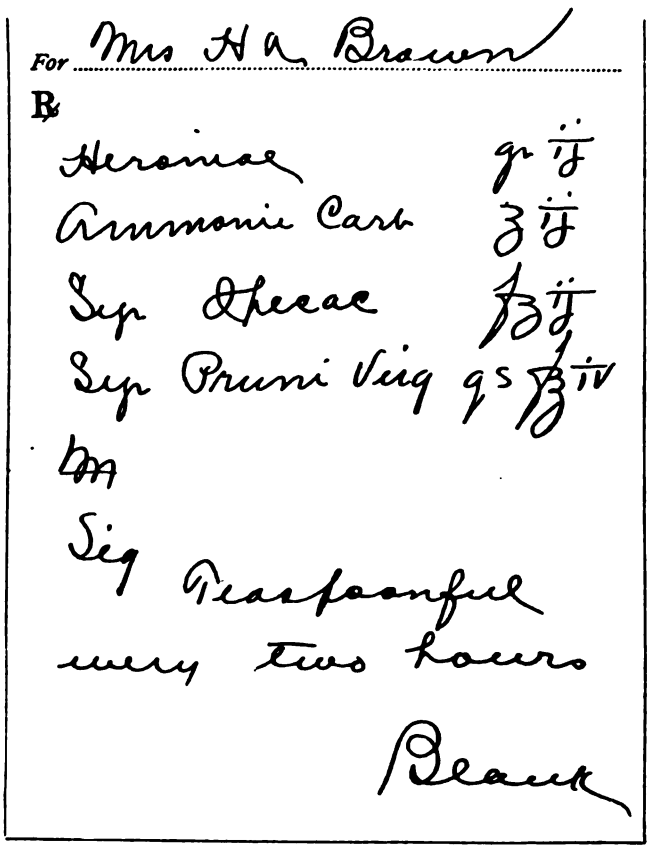
As this is only to be used to control the paroxysms, a small amount should be ordered.

Instructions are given that the prescription is not to be refilled, else the family may use it too long or in subsequent cases of cough when it would be inadvisable.

Tincture of belladonna leaves is frequently added to the above.

This should be given in water.

Prescribed for cough.



Heroine is very sparingly soluble and not often stocked. The salt should be used, and under the proper name.

A carbonate is incompatible with the free acetic acid in syrup of ipecac.

The abbreviation *Ipecac.* is too well understood by the laity, and nausea often occurs from the psychic effect of even a small dose.

Periods should follow abbreviations.

For Mrs. H. A. Brown.
923 Broad St., Blankville.

℞ Diacetylmorph. Hydrochl., gr. ij
Ammonii Carbonatis, ʒ ij
Syr. Ipecacuanhae, ℥ ij
Syr. Prunī Virg., q.s. ad ℥ iv
M.
Sig.- Teaspoonful every two hours.

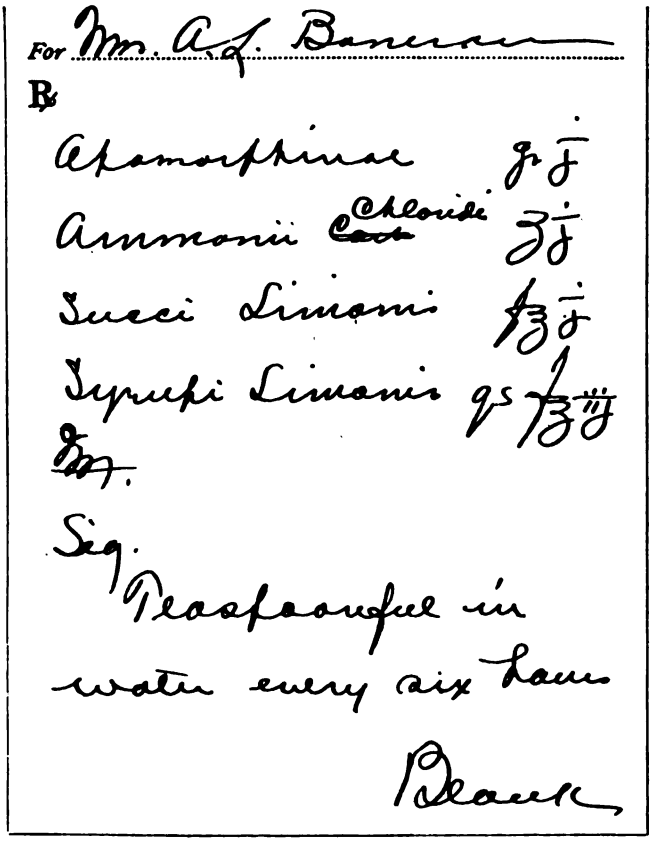
J. D. Blank.

Syrup of ipecac. contains free acetic acid; but in this instance the amount is small as compared with the carbonate.

The carbonate can be used in this combination with the diacetylmorphine and wild cherry alone, or apomorphine hydrochloride in about 1/60-grain doses.

The full expectorant dose of the syrup of ipecac. (15 minims) is often not well tolerated.

Used in treating a "dry cough."



Unusual proper names should be plainly written.

The salt of apomorphine should be used, and the above dose will frequently produce nausea.

The proper name for lemon juice is not used.

If an error is made or a word erased for any reason, a new prescription should be written.

A cough medicine is usually better administered at frequent intervals.

Syrup of Lemon has been replaced by the Syrup of Citric Acid.

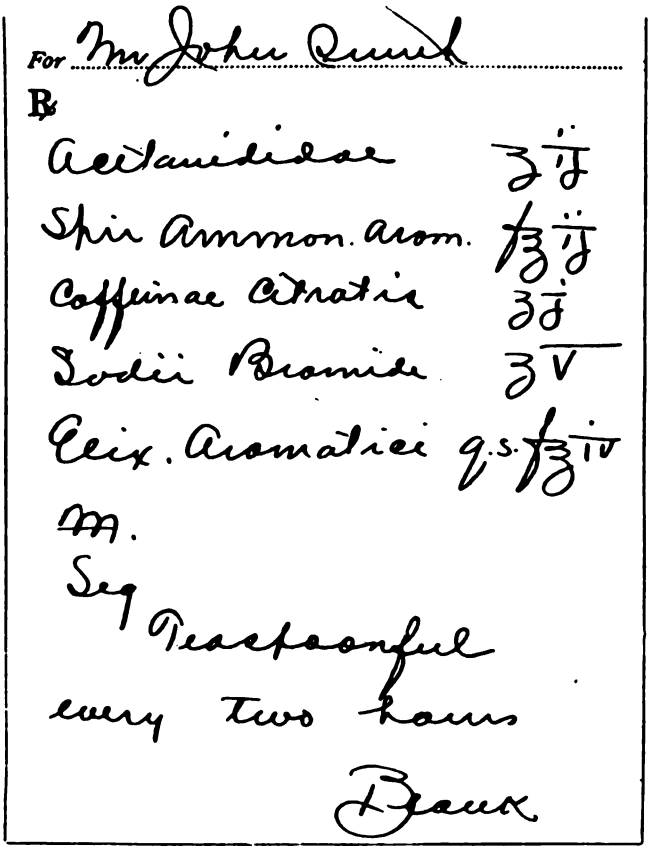
For Mrs. A. L. Bonevan.
℞ 637 Green St., Blankville.

Apomorph. Hydrochlor., gr. ℔ss
Ammonii Chloridi, ʒj
Limonis Succi, ℥ʒj
Syr. Acidi Citrici, q.s. ad ℥ʒiij
M.
Sig.- Teaspoonful in water every two hours.

J. C. Blank.

When ordering expectorants, as apomorphine hydrochloride, ipecac., etc., even in small doses, it is well to advise the nurse as to the possibility of nausea, and to reduce the dose if necessary, otherwise they may not only produce an undesired result, but it leads to a doubt as to the knowledge and judgment of the physician.

Prescribed for the headache, hiccough, etc., following acute alcoholism.



The quantity is too large for an acute condition, as headache.

Acetanilid does not take the ending *æ*.

Citrated caffeine is not a salt.

As a remedy of this type is only given until symptoms are relieved, it should be so specified.

This should be taken in water.

For M. John Smith.

℞

Acetanilidi, ʒ ss

Spir. Ammon. Ar., ℥ iv

Caffeinae Citratae, gr. xxx

Sodii Bromidi, gr. lxxx

Elix. Aromatici. q.s. ad ℥ jʒ

M.

Sig.- Teaspoonful every two hours until relieved.

Non rep. Blank.

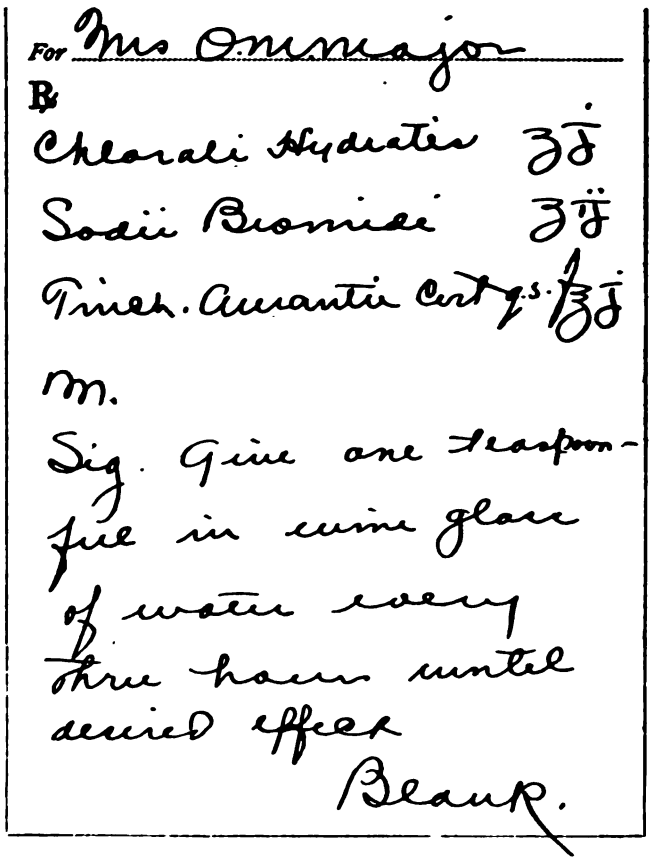
Attention is called to the rather unusual arrangement of the items in the inscription.

To get a good solution the druggist must dissolve the acetanilid in the aromatic spirit of ammonia, and the other solids in the elixir and then mix the two solutions.

The arrangement is to indicate that order.

Patient should be told to take this diluted with water.

Used as a sedative in hysteria, convulsions, threatened abortion, etc.


For Mrs O. Murray

℞

Chloralis Hydratis ℥ss

Sodii Bromidi ℥ij

Tinct. Aurantii Cort q.s. ad ℥ss

M.

Sig. Give one teaspoonful in wine glass of water every three hours until desired effect

Beaup.

The first item ordered is chloralum hydratum, the last word being an adjective and agreeing with the noun in case, etc.

Hydrated chloral is incompatible with a strongly alcoholic solvent, as chloral alcoholate is formed.

The directions are too long for the size label available.

The punctuation is imperfect.

For Mrs O M Major

℞

Chlorali Hydrati, ℥j

Sodii Bromidi, ℥ij

Aquae Chloroformi, q.s. ad ℥j

M.

Sig.—Teaspoonful every three hours until relieved.

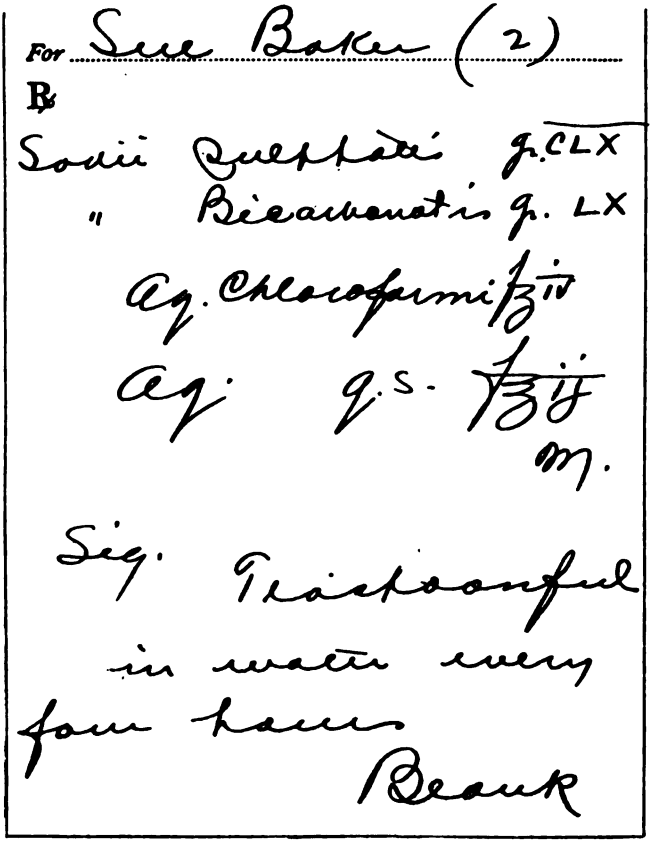
Blank

Longer instructions than this for a 1-ounce bottle should be written on a separate sheet and left with patient or nurse.

Aqua menthæ piperitæ or syrupus aurantii are pleasant vehicles for salts as the above.

If it is undesirable to order as many as eight doses the quantity of the salts can be reduced by one-half, and two teaspoonfuls given at a dose.

Prescribed for the "mucous diarrhea" of childhood.


For See Baker (2)

℞

Sodii Sulphatis gr. CLX

" Bicarbonatis gr. LX

Aq. Chloroformi ℥iv

Aq. q.s. ad ℥ij

M.

Sig. Teaspoonful in water every four hours

Beaux

Information as to age is incomplete.
The sign " should never be used in prescription writing.
A very short word is usually best not abbreviated.
The subscription is misplaced.
The arrangement of the directions could be improved.
Margins are not properly observed.

For Sue Baker (7 yrs.).

℞

Sodii Sulphatis. gr. CLX

Sodii Bicarbonatis. gr. LX

Aquae Chloroformi ℥j iv

Aquae, q.s. ad ℥iij

M.

Sig. Teaspoonful in water every four hours.

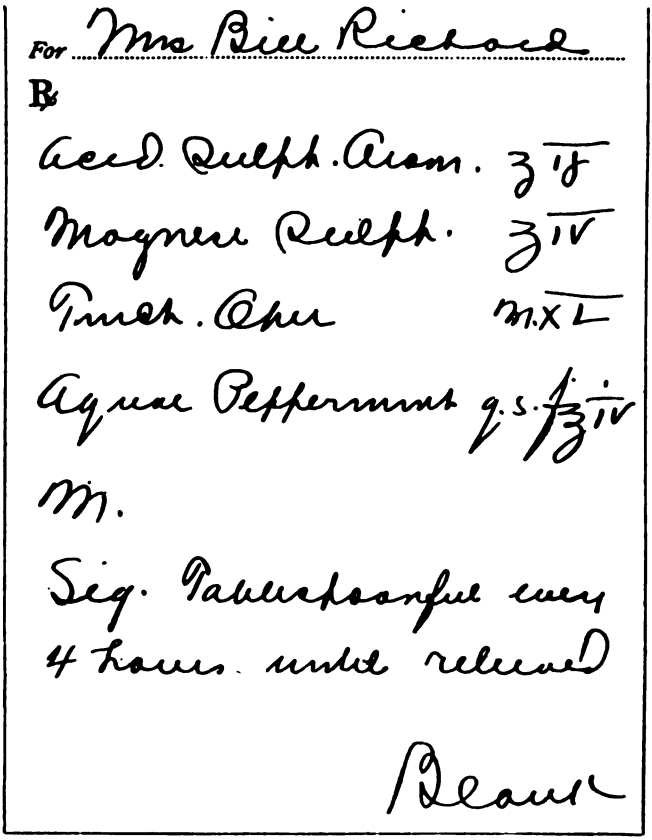
Blank.

This is frequently ordered to be taken after every action or every second action.

Instructions should always be left as to just how much water must be used in diluting the dose.

In the "acid intoxication" this is sometimes used with an increase in the amount of sodium bicarbonate, in which case more of the vehicle must be used or the vehicle made thicker and a shake label employed.

In a case of diarrhea, after the intestinal tract had been cleansed by a purgative, the following was ordered:


For Mrs Bill Richard

℞

Acid. Sulph. Aram. ʒ ij

Magnes Sulph. ʒ iv

Tinct. Opii ♏ xl

Aquae Peppermint q.s. ad ʒ iv

M.

Sig. Tablespoonful every 4 hours until relieved

Dr Doctor

"Mrs. Bill" may not be considered respectful.
The arrangement of the drugs is not good.
Acidi is better not abbreviated.
Magnesium ends in *ii* in the genitive.
Peppermint is not the official name of the drug wanted.
An *i* should be dotted and a *t* crossed.

For Mrs. W. B. Richards.
℞ 1737 White St., Blanksville.

Magnesii Sulphatis. ℥iv
Tinct. Opii Deod., m. xl
Acidi Sulph. Arom., ℥ij
Aquae Menth. Pip., q.s. ad ℥iv
M.

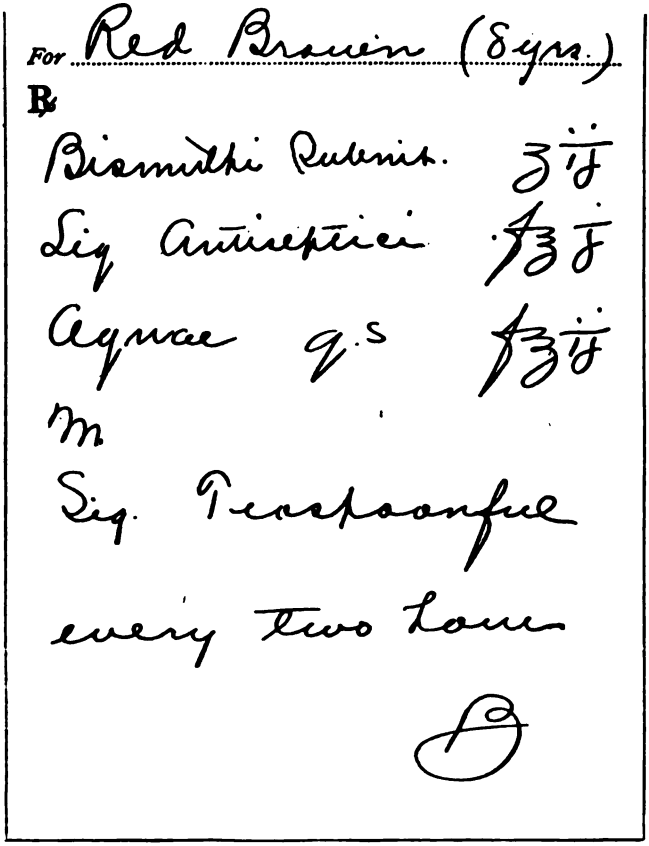
Sig.- Tablespoonful in water every four hours until relieved.

J. C. Blank.

The tincture of opium is the most potent ingredient and may be listed first. The above is the order in which the drugs would be handled by the compounder.

This formula is particularly useful where there is intestinal pain and tenderness.

Prescribed for ileocolitis.



It is usually best not to employ a nickname, particularly when it refers to a characteristic that may be shared by a parent.

The vehicle in this mixture would be so thin that the powder would not remain suspended long enough to admit of a dose being poured out before it settled.

A shake-label should be ordered.

Sufficient information as to prescriber is not given.

For John Brown (8 yrs.).

℞

Bismuthi Subnit., ʒ ij

Syr. Acaciae, ℥ iv

Liq. Antiseptici, ℥ j

Aquae, q.s. ad ℥ ij

M.

Sig. "Shake"

Teaspoonful every two hours.

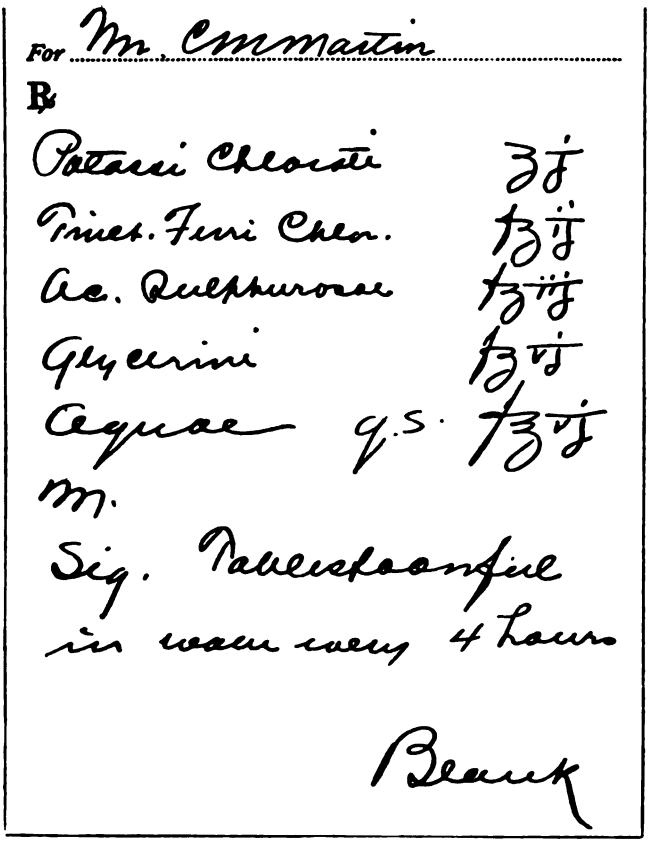
Blank.

This seems to be one of the most satisfactory ways of administering bismuth subnitrate.

A vehicle frequently employed is chalk mixture (Mistura Creta), which contains sufficient acacia and sugar for effecting a suspension.

Astringent tinctures, as tincture of catechu, or gambir, or kino, are sometimes used in the above.

For acute pharyngitis.



The alkali metals, as well as calcium, strontium, magnesium, etc., have the genitive ending *ii*.

The acid radicals in the salts of all the acids except the hydri acids and the lower oxy acids have the genitive *otis*, as sulphatis for sulphate.

The word acid appears better when written with proper termination. The genitive of all acids ends in *i*.

For Mrs. C. M. Martin.

℞

Potassii Chloratis, ʒ ss

Tinct. Ferri Chlor., ℥ ij

Acidi Sulphurosi, ℥ iij

Glycerini, ℥ vj

Aquae, q.s. ad ℥ vj

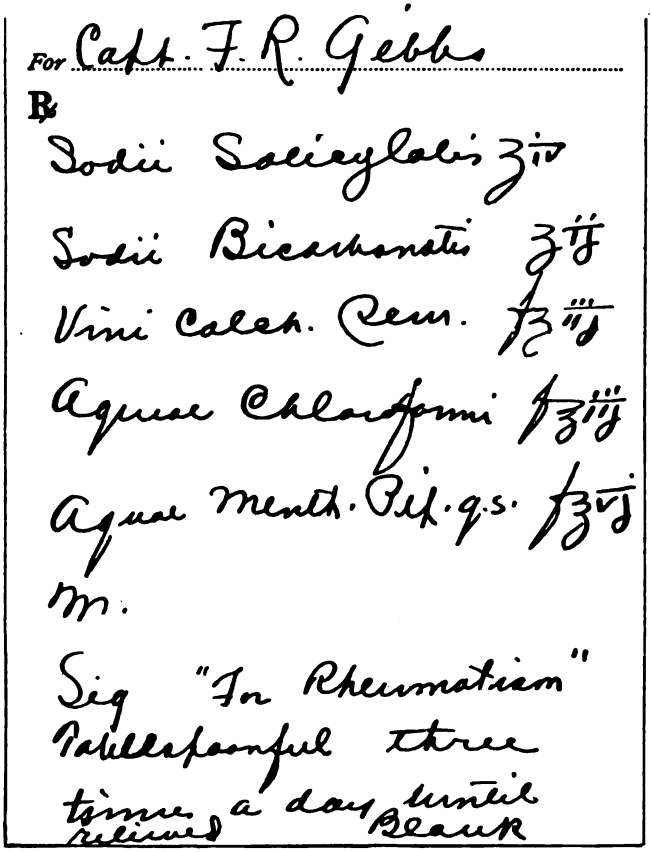
Sig. Tablespoonful in water every four hours.

Blank

Note the ending of sulphurous acid is underscored. It is not very frequently used, and might be misread as sulphuric acid.

Patient may be instructed to take the dose with one or two tablespoonfuls of water, and to clean the teeth afterward, but not to remove the remedy from the throat, as by eating or drinking soon after a dose has been taken.

Prescribed for a case of acute "rheumatism."



The arrangement on the sheet is open to criticism.

In an acute condition, particularly if painful, energetic treatment is usually indicated.

The wine has been discontinued to a great extent in favor of the tincture.

The disease should never be specified on the label.

For Capt. F. R. Gibbes.

℞

Sodii Salicylatis, ℥iv

Sodii Bicarbonatis, ℥ij

Tinct. Colchici Sem., ℥ℨiij

Aquae Chloroformi, q.s. ad ℥ℨvj

M.

Sig.— Tablespoonful in water each evening at 4, 6, 8 and 10.

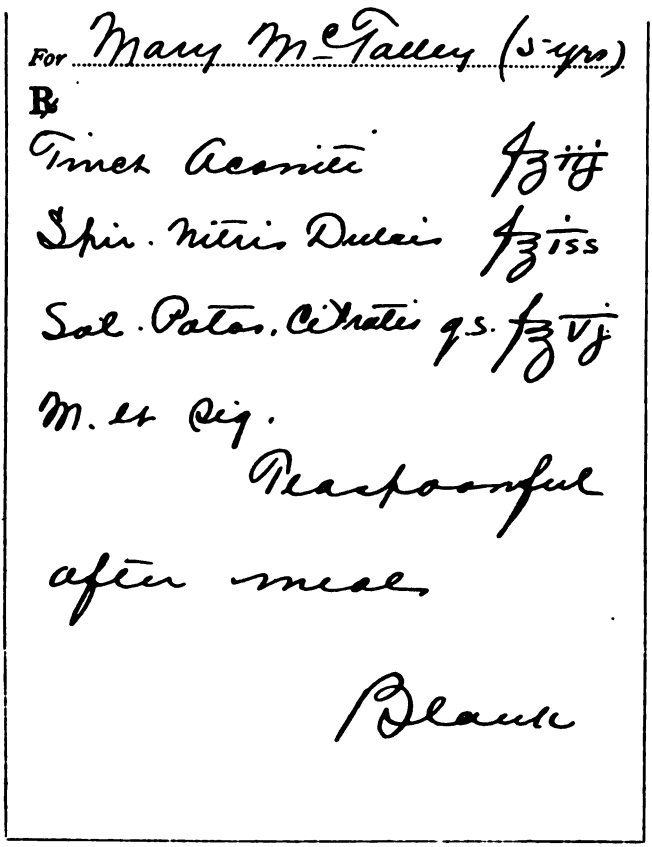
Blank.

Chloroform water only contains about one minim to the tablespoonful; so can well be given in above dose.

Instructions should be left as to reducing dosage upon relief of pain or development of unpleasant effects, as ringing in ears, etc. Some patients seem to tolerate the salicylates better if they are administered in cold milk.

As an adjunct to this treatment many employ massage with a liniment containing oil of wintergreen or methyl salicylate.

Prescribed for the high fever incident to the early stages of certain acute diseases.



Spir. Nitris Dulcis is not the name of the agent wanted.

Solution is not the official Latin term for the class of preparation wanted.

The directions to druggist and patient are best treated as separate paragraphs.

The quantity is too large and the dosage not sufficiently intense for an acute condition.

For Mary McTalley (5 yrs.).

℞

Tinct. Aconiti. ♏ j

Spir. Aethers Nit., ♏ iv

Liq. Potassii Cit., q.s. ad ℥ ij

M.

Sig. Teaspoonful in water every three hours.

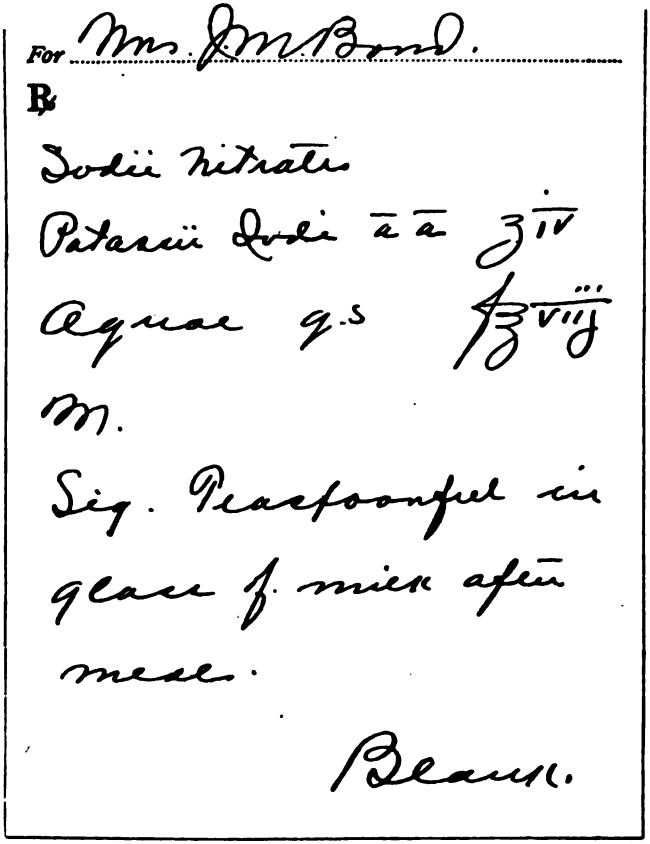
Blank.

Lemonade is often a desirable diluent for a remedy of this type.

In using a combination of this character the prescriber should have patient sufficiently under observation to enable him to discontinue the medicine at the proper time.

The trend of the profession is toward the employment of water as the one great antipyretic.

First prescription for a patient with high blood-pressure, and urine with low specific gravity.



The nitrate is not the salt desired.

Large doses of sodium nitrite should never be used until the effect of smaller doses has been noted.

A small bottle containing a smaller dose would be indicated to begin the treatment.

Iodi is the genitive for iodine, but not for iodide.

For Mrs J.M. Bond.

℞

Sodii nitritis, gr. XVj

Sodii bromidi, ʒiij

Aquae, q.s. ad ʒiv

M.

Sig. Teaspoonful with a glass of milk after meals.

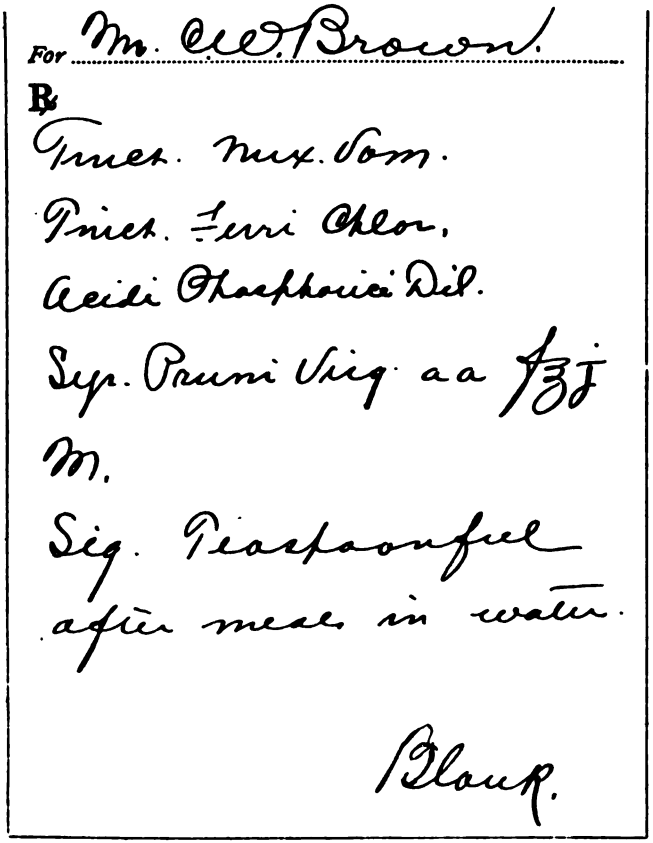
Blank.

Note that the attention of the compounder is called to the word nitritis, which closely resembles nitratis.

The direction "in a glass" is changed to "with a glass." The patient often can better take a dose with a small amount of the diluent ordered and use the rest to remove the taste from the mouth, in preference to drinking a whole glass of a disagreeable mixture. The dilution in the stomach is the same, of course.

It is often more desirable to give a preparation of this type with water.

Prescribed for a patient suffering from anemia, loss of appetite, general weakness, etc.


For Mr. C. C. Brown.

℞

Tinct. Nux. Vom.

Tinct. Ferri Chlor.

Acidi Phosphorici Dil.

Syr. Pruni Virg. aa ℥ij

M.

Sig. Teaspoonful after meals in water.

Blank.

In a prescription of this type it is better to list the ingredients in the order in which they should be mixed. Nux vomica added to tincture of ferric chloride would cause a precipitate of iron tannate.

If the phosphoric acid is added to the iron first the reaction does not take place.

Nux in the genitive changes to nucis.

The directions would be better if transposed.

For Mr. C. W. Brown.

℞

Tinct. Ferri Chlor.,
Acidi Phosphorici Dil.,
Tinct. Nucis Vom.,
Syr. Pruni Virg., āā. ℥ij
M.
Sig Teaspoonful
in water after meals.

Blank.

Attention is called to the instructions that the preparation be taken in water. Dilution lessens the action on the teeth, renders the taste less disagreeable, and aids the action as a bitter tonic.

In ordering an iron solution the physician should always instruct that the preparation be taken through a tube and the teeth cleansed after each dose.

The following "Four Chlorides" tonic is often prescribed.

For Mrs. Sam Martin

℞

Glycerini ℥ss ℈

Hydrarg. Chlor. Corros. gr. ij

Liquor. Ferri Chlor. ℥j ℈iv

Acidi Hydrochlor. Dil. ℥j ℈iv

Liq. Acidi Arsenosi ℥ss ℈ij

Aquae q.s. ad ℥xij

M.

Sig. Two(2) Teaspoonfuls in water after meals.

Blank.

"Mrs. Sam" may be objectionable.

The mercuric salt being a solid, a potent drug and one of the principal ingredients, should be written first.

The arsenic solution, as the most potent and probably important of the liquids, should be written before the others.

There is no reason why this should not be concentrated to a 6-ounce solution with teaspoonful dose.

For Mrs. S. A. Martin

℞

Hydrarg. Chlor. Corros., gr. ℥j
Liq. Acidi Arsenosi, ♏ ℥j
Tinct. Ferri Chlor., ♏ iv
Acidi Hydrochlor. Dil., ♏ iv
Glycerini, ♏ f
Aquae, q.s. ad ℥vj
M.
Sig Teaspoonful in water after meals.

Blank

It is particularly desirable in prescribing preparations as the above to give the patient written instructions as to the amount of water to use, the time of taking, the use of a glass tube, and the cleaning of the teeth after each dose.

For Mary Brand.

℞

Quininae Hydrochlor. ʒss

Syr. Liquoricii ℥ij

M.

Sig. Teaspoonful as directed

Blank.

Prescribed as an agreeable quinine preparation for a child.

The principle in preparing so-called "tasteless" quinine is to use a salt that will dissolve only to the smallest possible extent so that it will not come into contact with the special nerve elements in such form as to be appreciated.

The age of the patient should be given.

Liquorici is not the proper name of the drug wanted.

The vehicle should be used in sufficient quantity to make up to 2 fluidounces.

The sulphate is probably the best salt for "tasteless" quinine mixtures. The tannate is the least bitter of the quinine salts, but has to be given in larger amounts and at least is slower and more uncertain in action.

It is usually possible to ascertain the preference of the child as to flavor. Glycyrrhiza may be distinctly disagreeable to some, while syrup of chocolate would be very agreeable.

Written instructions may be given as to shaking the mixture.

For Mary Brand (6 yrs.).

℞

Quininae Sulphatis, ʒss

Syr. Glycyrrhizae, q. s. ℥ij

M.

Sig. Teaspoonful as directed.

Blank.

Used as a tonic particularly in chronic malaria.

Liquor Arseni Chloridi and Tinctura Ferri are not the proper names for the preparations wanted.

It is unnecessary to use distilled water in a preparation of this character.

ad may well be omitted.

The directions are subject to improvement.

Physician's name should be more carefully written.

For Jos. James (adult)

℞

Quininae Sulph. ʒ ij

Liq. Arseni Chlor. ♏ xij

Tinct. Ferri ♏ xvj

Glycerine ♏ xl

Aquae Dest. q.s. ad ♏ viij

M.

Sig. Teaspoonful three times a day.

Blank.

For Jos. James (adult).

℞

Quininae Sulph., ʒ ij

Liq. Acidi Arsenosi. ♏ xij

Tinct. Ferri Chlor., ♏ xvj

Glycerini, ♏ xl

Aquae, q.s ♏ viij

M.

Sig. Teaspoonful in water after meals

Blank

Where the condition was not malarial the amount of quinine sulphate would probably be reduced.

Written instructions should be given patient as to amount of water, use of glass tube, cleaning teeth, etc.

It should be remembered that a quinine solution is always intensely bitter and that patients are apt to discontinue the remedy.

For M. F. C. Blaen.

℞

Pepsini (1-3000) ʒ ij

Acidi Hyd. Dil

Tinct. Nuc. Vomicae

Glycerini āā ℥ss

Aquae q.s. ad ℥vj

M.

Sig. Teaspoonful after meals.

Blank.

Prescribed for indigestion.

Pepsini here calls for the U. S. P. product, which is standardized at 1 to 3000; so further specification is unnecessary.

Acidi Hyd. Dil. might mean the diluted hydrochloric, hydrobromic, hydrocyanic or others.

The label should indicate that the preparation is to be diluted for administration.

It should be remembered that a preparation of this character without instructions as to diet, manner of eating, etc., is practically useless.

It is probably best to discontinue the use of the pepsin preparation gradually. It may be first omitted after the lightest meal of the day, then used only after the principal meal, etc.

For M. F. C. Black.

℞

Pepsini, ʒ ij

Acidi Hydrochlor. Dil., ℥ss

Tinct. Nucis Vomicae, ℥ss

Glycerini, āā. ℥ss

Aquae, q.s ad ℥vj

M.

Sig. Teaspoonful in water after meals.

Blank.

Has been prescribed for syphilis.

For Mrs. J. Jacobson

℞

Hydrarg. Bichloridi gr. VIij

Sol. Sal. Potas. Iod. q.s. ℥iv

M.

Sig. Ten (10) drops in glass of water after meal.

Blank.

The name of the patient is usually best omitted in venereal diseases.

The proper name is not used for the mercurial salt.

The content of a "saturated solution" often depends on the amount of effort put forth by the particular compounder.

The quantity is rather large for the dose, as decomposition may occur to some extent before the amount would be used.

For Mrs. J-

℞

Hydrarg. Chlor. Corros., gr. ij

Potassii Iodidi, ℥j

Aquae Dest., q.s ad ℥j

M. ft. sol.

Sig. Ten (10) drops three times daily as directed.

Blank.

While convenience or economy may dictate this style of prescription, the physician should avail himself of an early opportunity to test the dropper the patient is using or note the rapidity with which the liquid is disappearing.

Written instructions should be given as to time of taking, diluting, etc.

It is probably best to administer one hour before or two hours after meals and to have the patient take the medicine diluted with one-fourth glass of water and follow with a glass of milk.

For Mrs. Jones baby.

℞

Hydrarg. Chlor. Mite gr. ½

Sacchari Lactis gr. X

M. ft. cap. no. 3.

Sig.

One every hour

Blank

Prescribed as a purgative for a child 2 years old suffering from intestinal indigestion.

The name and age of the patient should be given.

Mite is not in the genitive case.

A child cannot usually take capsules till 8 or 10 years of age.

The inscription is a Latin sentence; so Roman numerals should be used.

Attention is called to the advantage of using sugar of milk in administering calomel to children. It has an agreeable taste and, of course, is therapeutically inert. In this quantity sufficient bulk is given to the powder to facilitate handling. In administering calomel to a child it is usually considered best to give in the early part of the day and follow in two or three hours by castor oil. The active purging is over before bedtime or may be checked by a warm colon irrigation.

For Mary Jones (2 yrs.).

℞

Hydrarg. Chlor. Mitis, gr. ½

Sacchari Lactis, gr. XX

M. ft. chart. no. vj.

Sig.

One every half hour.

Blank.

Ordered for a child 5 years old when a diagnosis of roundworms had been made.

All glucosides, neutral principles, etc., have the genitive ending i.

Santonin, although sometimes prescribed recklessly, is rather a potent drug, and this dose is too large.

This should be prescribed with something to dilute and render more palatable.

It is probably wise to instruct that the above is not to be triturated, as the crystals of santonin are more apt to reach the lower intestinal tract than the powdered drug.

For Charlie Green (5 yrs.)

℞

Santoninae gr. X

Hydrarg. chlor. mitis gr. ij

M ft. chs no. iv.

Sig

One every hour

Blank

For Charlie Green (5 yrs.)

℞

Santonini, gr. j

Hydrarg. Chlor. Mitis, gr. ij

Saccheri, gr. X

M. (non trit.) ft. chs. no. ij

Sig.- Take an hour apart.

Blank.

This should be followed by an active purgative, as a tablespoonful of castor oil. Many prefer to give the santonin and sugar of milk without the calomel and follow with a purgative later.

Written instructions should be left with the family as to diet, etc. The best time for administering the above is probably in the morning, so that it can be properly followed by the castor oil and then by the colon irrigation.

For Miss Fannie Adams

℞

Salol gr. LX

Ft. cap. no. vj

Sig

One every four hours

Blank

For typhoid fever, etc.

Salol is neither the official Latin nor the proper English name of the drug wanted.

It is usually best to express a quantity by its largest denomination.

It is probably inadvisable to prescribe salol alone in capsules.

It is not often advisable to order more than 5 grains of a substance to each capsule.

As the drug is almost odorless and tasteless, there is no objection to giving in powders. The size of the dose and the tendency to form concretions would militate against the use of capsules. If it is ordered in capsules it should be mixed with a small amount of some soluble powder, as milk sugar, to cause the disintegration of the lump resulting from packing in the capsules.

For Miss Fannie Adams

℞

Phenylis Salicylatis, ℥j

Ft. chs. no. vj

Sig.

One every six hours.

Blank.

Prescribed for Mr. Smith, who complained that he was "bilious."

For John Smith

℞

Hydrarg Chlor. Mitis

Pulv Rhei

Fel Bovis Drach. āā gr. v

Extr. Hyoscyamus. gr. j

M. ft. cth. no. iij

Sig.

One every hour

Blank

It should be specified that John Smith is an adult.

Hyoscyamus is not in the genitive case.

This preparation would have a very disagreeable taste and would be best administered in capsules. If patient could not take capsules, other agents should be selected.

Adjectives should follow nouns.

For M. John Smith.

℞

Hydrarg. Chlor. Mitis,

Rhei Pulv.,

Ext. Fel. Bovis, āā. gr. v

Ext. Hyoscyami, gr. j

M. ft. cap. no. iij

Sig.-

One every hour.

Blank.

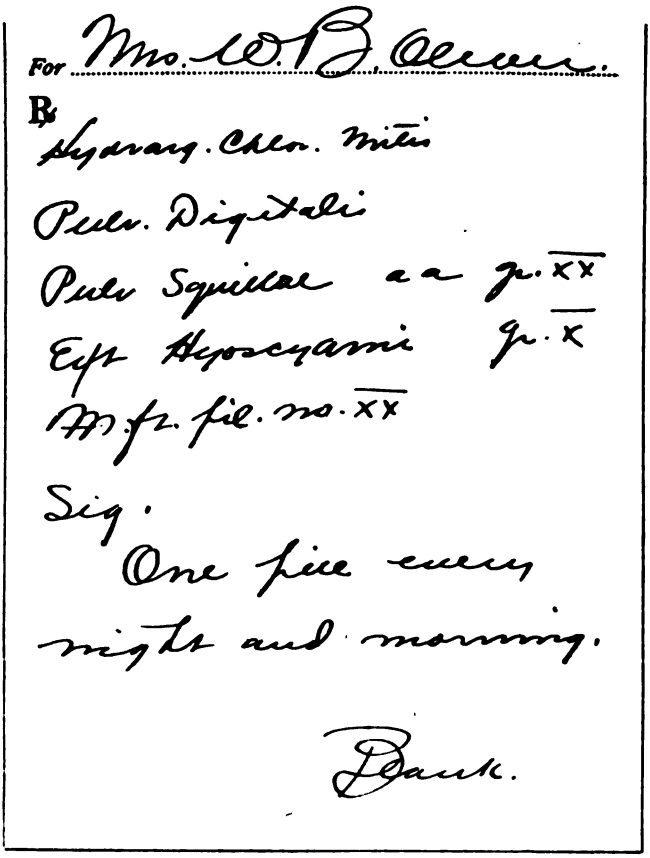
These capsules are best given so that the last will be at bedtime and a saline administered early the following morning.

It is claimed that the purgation from the above is accompanied by a minimum of discomfort.

As a rule it is particularly undesirable to give a mercurial purge in broken doses at long intervals during the day, as the patient may be unnecessarily given a day of considerable discomfort.

Note the use of the new official extract of oxgall.

Prescribed in the treatment of dropsy.



Squill is not the Latin name of the drug wanted.

Pulv. is here the abbreviation of the Latin for the adjective, *powdered;* so it should follow the noun.

The words *pill* and *every* in the directions are obviously unnecessary.

For Mrs. W. B. Oliver.

℞

Hydrarg. Chlor. Mitis,
Digitalis Pulv.,
Scillae Pulv., āā. gr. $\overline{XX}$
Ext. Hyoscyami, gr. $\overline{X}$
Ft. ft. cap. no. $\overline{XX}$
Sig. One night
and morning.

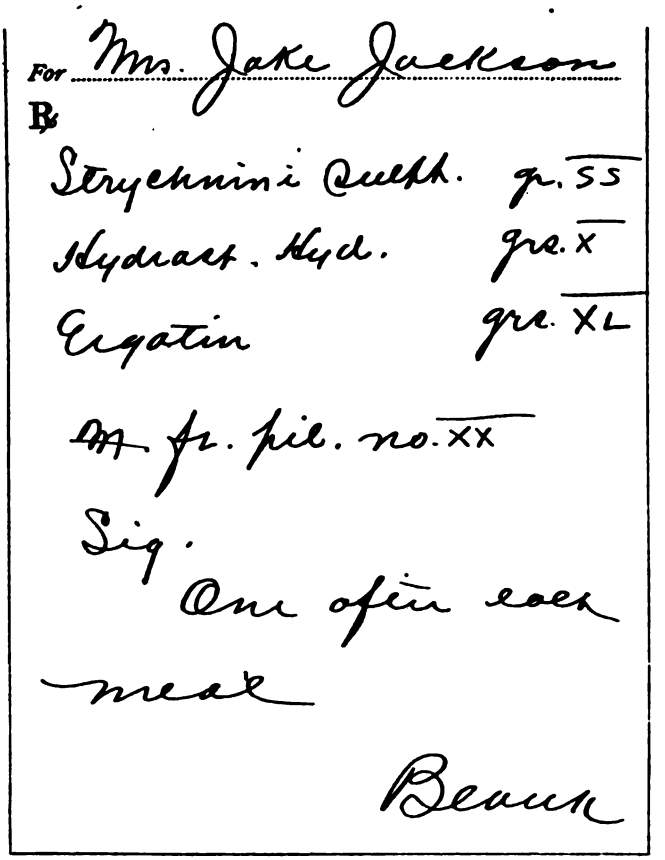
L. Glass R

This is given here more to illustrate the old formula than to recommend it. This is certainly more desirable in capsules.

Hyoscyamus is frequently omitted from this combination, but its use to limit intestinal discomfort, etc., seems to be well founded.

Even if it is desired to continue this treatment for some time, the first prescription should be for a small amount, as it is frequently not well tolerated.

Prescribed for a case of menorrhagia.

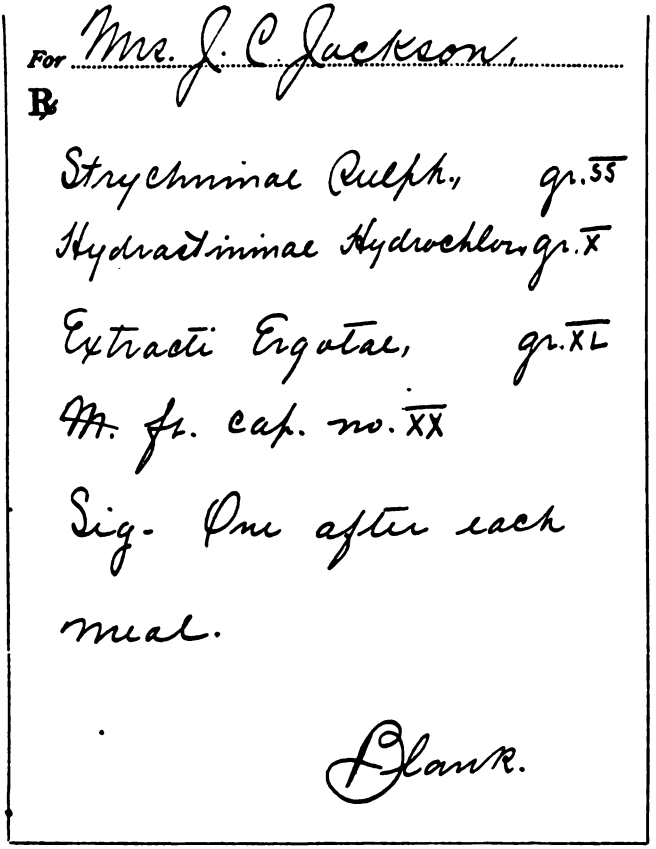


The abbreviation *gr.* stands for both the singular and the plural.

In cases where there are two substances with the names so nearly alike, as Hydrastina and Hydrastinina, an abbreviation that might represent either is obviously incorrect.

The indefinite ergotin is better replaced by the U. S. P. product.

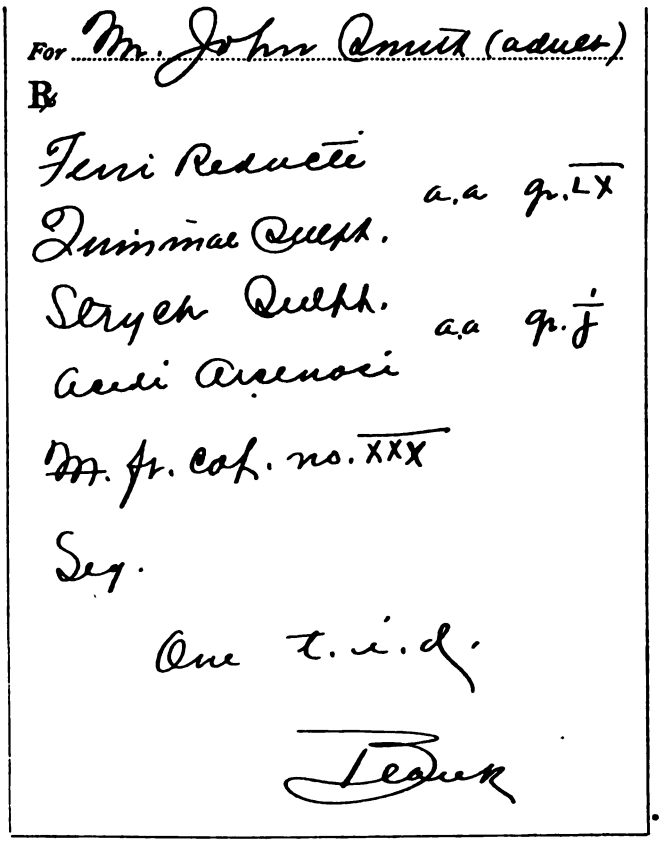
Preparations of this character are better prescribed in capsules.



An important point here is the use of the concentrated products in capsules to replace the old custom of using the fluidextracts, which constituted such a disagreeable mixture, and frequently led to gastric disturbances. The same idea will often apply in prescribing.

It is usually best in prescribing potent drugs to write out the names as completely as possible.

Prescribed for a patient recovering from malaria. He was slightly anemic, had no appetite, was weak and generally "run down."



Adult is unnecessary, as Mr. conveys that information.

The abbreviation for *of each* is not properly made.

It is usually best to list the most potent drugs first. The druggist selects them first for several good reasons.

The Quinine is not sufficient for malarial treatment.

The prescriber would not wish *t. i. d.* on the label, so should not instruct the druggist to put it there.

For M. John Smith.

℞

Strychninae Sulph.,

Arseni Trioxidi, āā. gr. j

Quininae Sulph., ʒij

Ferri Reducti, ʒj

M. ft. cap. no. XXX

Sig.- One after each meal.

Blank.

The mass of ferrous carbonate is often used instead of the reduced iron.

When a drug is given three times a day it is usually best to know whether it should be given before or after meals, and so specify. The patient cannot be too forcibly impressed with the fact that the physician knows just what he wants.

For Mrs. G. W. Moore.

℞

Thymoli. gr. L

M. ft. Chs. no. IV

Sig. One every hour followed by a saline. Avoid oils and alcoholics.

Blank.

Ordered for a case of hookworm.

Drugs the nominative of which end in *l* usually have the genitive ending *is*.

It is usually considered best to dilute this agent.

Thymol is best administered in capsules.

Part of this label is unnecessary, as specific written instructions as to dose, etc., should be left with the patient.

It is not often advisable to tell a patient to "take a saline." Definite directions should be given as to what to take and how much.

For Mrs. G. W. Moore.

℞

Thymolis Pulv.,

Sacchari Lactis, āā. gr. L

M. ft. cap. no. XX

Sig.

Five (5) every hour.

Blank.

Note the number of capsules. It is not often that more than 5 or 6 grains should be ordered to the capsule.

Detailed instructions should be left with the patient as to the taking of the capsules, the diet, etc.

Thymol may often be given to advantage, powdered and suspended in a thick liquid.

Prescribed for amebic dysentery.

For Mr. J. C. Lewis

℞

Sugar coated Pills Ipecac (½ gr.) L

Sig. Take ten (10) pills each night for three nights then reduce two pills each night

Beaux.

The inscription can be better written.

It is impossible to put sufficient directions on the available label space; so it is best to make out a special sheet of instructions to be left with the patient. These written instructions should of course include diet, etc.

For Mr. J. C. Lewis.

℞

Ipecacuanhae Pulv. gr. CCL

Phenylis Salicylat. q. s.

Ft. pil. enter. no. L.

Sig.

Take as directed.

Glass.

These are best taken at bedtime.

Patient or family should be warned as to the possibility of nausea and vomiting, and instructed as to the use of the cold cloth to throat, etc. If the pills are too heavily coated they may pass through entire; so patient should be instructed to watch for them.

For Jannie White (17 yrs.)

℞

Blauds Pills (5 gr.) no. XX

Sig.

Two (2) pills 3 times a day after each meal.

L. Dann

This was for a young lady suffering from chlorosis.

It would be better to indicate the age of the patient in a different way.

Blauds Pills is not the official name.

It is unnecessary to specify the size, as there is only one official.

The condition for which the iron carbonate is used generally requires extended treatment and in that case it is cheaper for the patient to purchase more at a time.

The directions could be better expressed.

This is the so-called 5-grain Blaud's Pill. It contains about 5 grains of the total mass or about 1 grain of ferrous carbonate. Unofficial pills may be ordered prepared of any size. The ready-prepared pills are on the market containing 2, 3, and 4 as well as 5 grains of the mass. If other than the official pill is wanted the size should be specified.

It should be remembered that on the above prescription the pharmacist would dispense the ready-prepared pills, probably gelatin coated.

For Miss Jannie White.

℞

Pil. Ferri Carb., No. C

Sig.

Two (2) after each meal.

L. Dann.

Prescribed for a case of acute cystitis.

A pet name should seldom be employed, a nickname never, particularly if of a racial character.

Extractum Belladonnæ is not the full name of the drug wanted.

Cocoa Butter is not the official name of that drug and the quantity is best left to the discretion of the pharmacist.

The directions are subject to improvement.

For Jkey Goldstein

℞

Ext. Opii gr. $\overline{vj}$

Ext Belladon gr. $\overline{ij}$

Cocoa Butter gr. XXX

M. ft. Suppos no $\overline{viij}$

Sig One night and morning

Blank.

For M. Isaac Goldstein

℞ 1643 Jackson Ave., Blankville

Ext. Opii, gr. $\overline{vj}$

Ext. Belladon. Fol, gr. $\overline{ij}$

Ol. Theobromatis, q. s.

M. ft. Suppos. no. $\overline{viij}$

Sig.- Insert one twice daily.

J. C. Blank.

In warm weather these should be kept in a cool place.

The first can be quickly hardened by putting it in a spoon resting on cracked ice and salt.

They may be dipped in cool olive oil to facilitate introduction.

In prescribing rectal suppositories for women the physician should make it definitely understood that they are not for vaginal use.

For Mrs. Bill Banks.

℞

Sodii Sulphatis ℥ij

Potassii Bitartratis ℥ij

M.

Sig. One teaspoonful in glass of water early every morning

Bland B.S. Pk. 9. md.

Ordered as a morning laxative.

There is a general disregard of margins and arrangement.

Mrs. "Bill" might appreciate a more dignified title.

The word teaspoonful is understood to mean 1 teaspoonful.

The degrees do not look modest.

If the preparation is taken in hot water the effect is usually more pronounced.

Hot lemonade is often the more desirable solvent.

When the taste of the sodium sulphate is found too objectionable it may be omitted and the potassium bitartrate alone be administered in a glass of hot lemonade.

For Mrs. Wm. Banks.

℞

Sodii Sulphatis, ℥j

Potassii Bitart., ℥ij

M.

Sig. Teaspoonful in glass of hot water early every morning.

Blank

Ordered in the treatment of syphilis.

The continued application of the above will frequently produce irritation.

More than eight applications in succession are usually indicated, so may well be ordered at once for several reasons.

There is nothing to mix.

It is better to specify waxed or oiled paper.

For Mr. Jones

℞

Ung. Hydrarg. Dil. ℥j

M. ft. Chk. no. viij

Sig. Use one each night as directed.

Blank.

For Mr. Jones.

℞

Ung. Hydrargyri, ℥j

Adipis Lanae Hyd.,

Ung. Aquae Rosae, āā. ℥ss

M. ft. Chk. Cerat. no. xvj

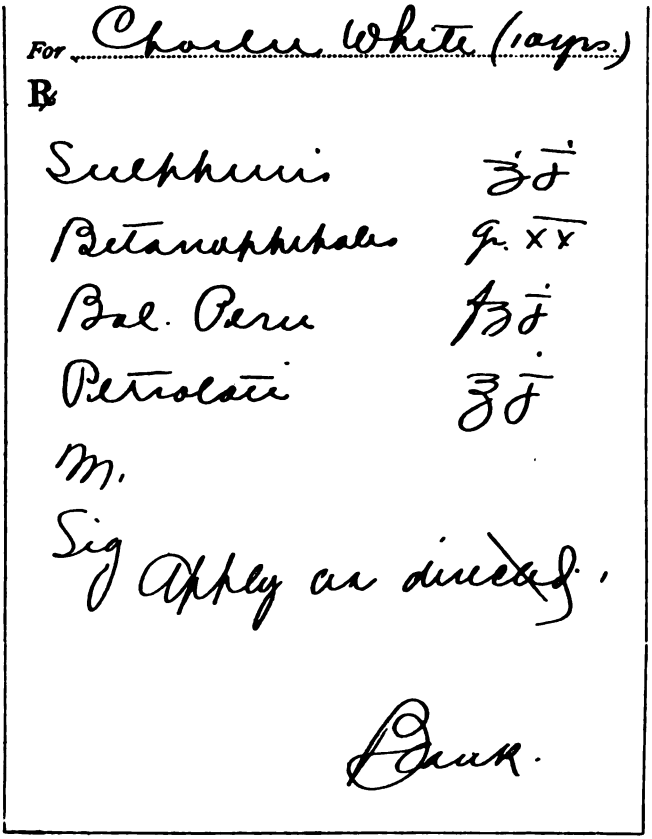
Sig. Use one each night as directed.

Blank.

Complete written instructions should, of course, be left with patient as to baths, site of applications, etc.

The pharmacist will charge for putting this into doses; so when economy is a factor the ointment may be ordered in bulk and the directions made to read: *Apply a teaspoonful every night.*

Prescribed for a case of scabies.



Sulphur, unless otherwise specified, means the sublimed or common, which is not the best to use here.

Peru is not the full word wanted; so should either be carried out or a period used.

The quantity here would be too much for a 1-ounce jar and too little to look well in a 2-ounce jar.

For Charlie White (10 yrs.).

℞

Sulphuris Præcip. ʒj

Betanaphtholis, gr. xx

Bal. Peruviani, ʒj

Petrolati, q.s. ℥j

M.

Sig.

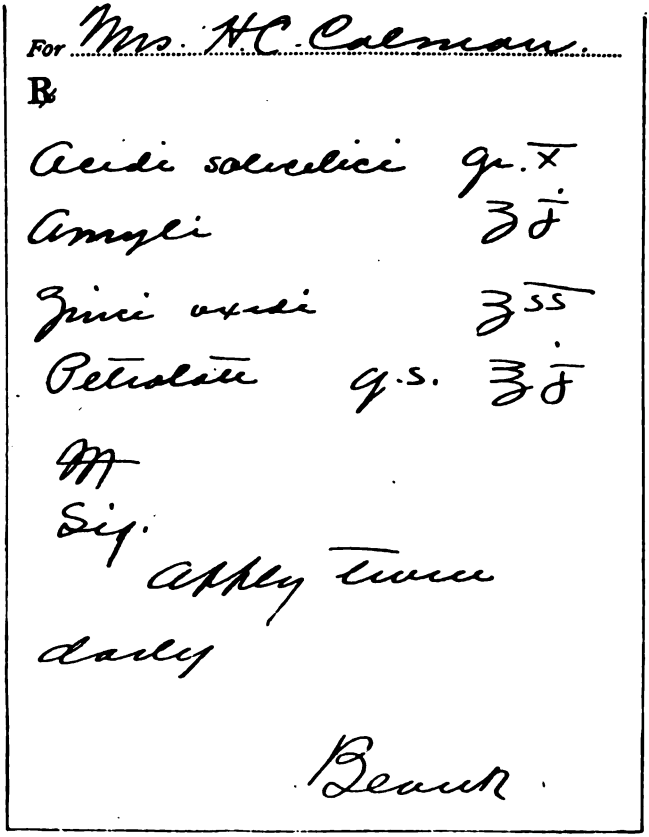
Apply as directed.

Blank.

Written instructions should be left as to duration of treatment, bathing, change of clothes, etc.

Note the fluid, balsam of Peru, is prescribed by weight. It adheres to the vessel to such an extent that in this quantity it is more conveniently weighed than measured.

This ointment was ordered for Mrs. Coleman to relieve an erythema resulting from the continued use of wet bichloride vulva pads.


For Mrs. H.C. Coleman.

℞

Acidi salicilici gr. x

Amyli ℥ss

Zinci oxidi ℥ss

Petrolati q.s. ad ℥j

M

Sig. Apply three times daily

Beach.

The name of the patient is misspelled. The correctness of patient's name is important.

The name of the acid is misspelled.

Each word in each name in the inscription should begin with a capital letter.

It is hard to well incorporate zinc oxide in an extemporaneous ointment. It is better to order the ointment of zinc oxide.

For Mrs. H. C. Coleman.

℞

Acidi Salicylici, gr. X

Amyli, ℥ss.

Ung. Zinci Oxidi, ℥ij

Petrolati, q.s. ad ℥j

M.

Sig. Apply twice daily.

Blank

Phenol may be added to this if marked itching is a factor.

Boric Acid is often used in the above formula.

After the ointment has been thoroughly applied the area may be dusted with bismuth subnitrate for comfort and protection to clothing.

For Aaron Schmidt (5-yrs)

℞

Gum Camphorae

Chlorali Hydrati aa ʒss

Pet. Jelly q.s. ℥ss

M. ft. ung.

Sig. apply freely to parts affected several times a day.

Dr. Blank.

Prescribed for eczema, particularly of the scrotum.

Camphor is not a gum.

Petroleum Jelly is not the proper name of the agent wanted.

It is unnecessary to instruct that an ointment be made, as nothing else could result from mixing the above ingredients.

The ointment boxes used by the majority of druggists admit of only limited label space.

For Aaron Schmidt (5-yrs.)

℞

Camphorae,

Chlorali Hydrati āā. ʒss

Petrolati, q.s. ℥ss

M.

Sig. Apply as directed.

Dr. Blank.

Camphor and hydrated chloral will liquefy when triturated together, and with the petrolatum should form a smooth ointment.

Written instructions should be left as to manner and frequency of application, use of water, oil, etc.

From 1 to 5 grains of cocaine hydrochloride are sometimes added, but is usually unnecessary.

If it produces discomfort, instruct that it be diluted with vaseline.

This ointment is frequently ordered for sore eyelids.

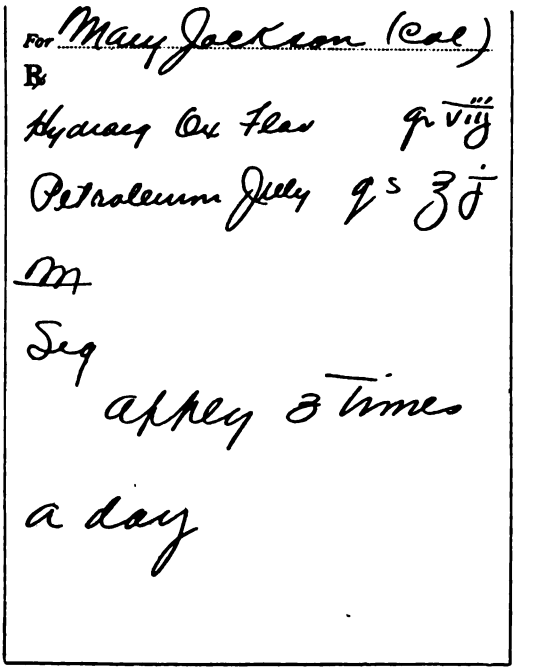
There is no advantage in specifying the color of the patient, but age should be indicated.

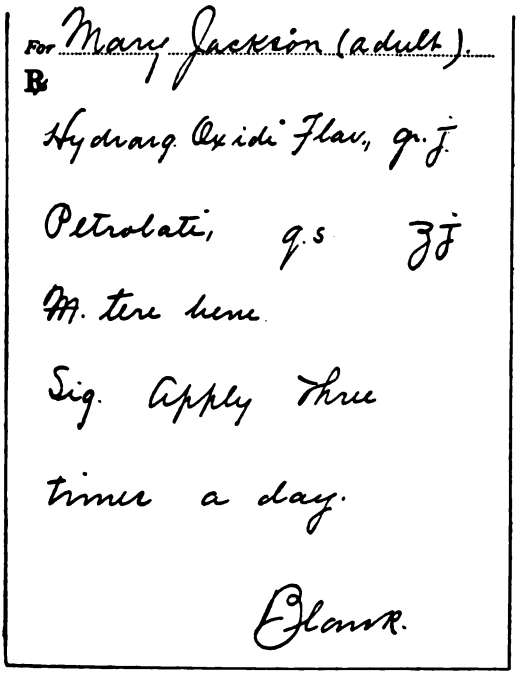
Petroleum Jelly is not the official name of the agent wanted.

The quantity of the ointment is too large for the purpose intended, as it might become contaminated, and only a small amount is usually required.

An abbreviation should be followed by a period.

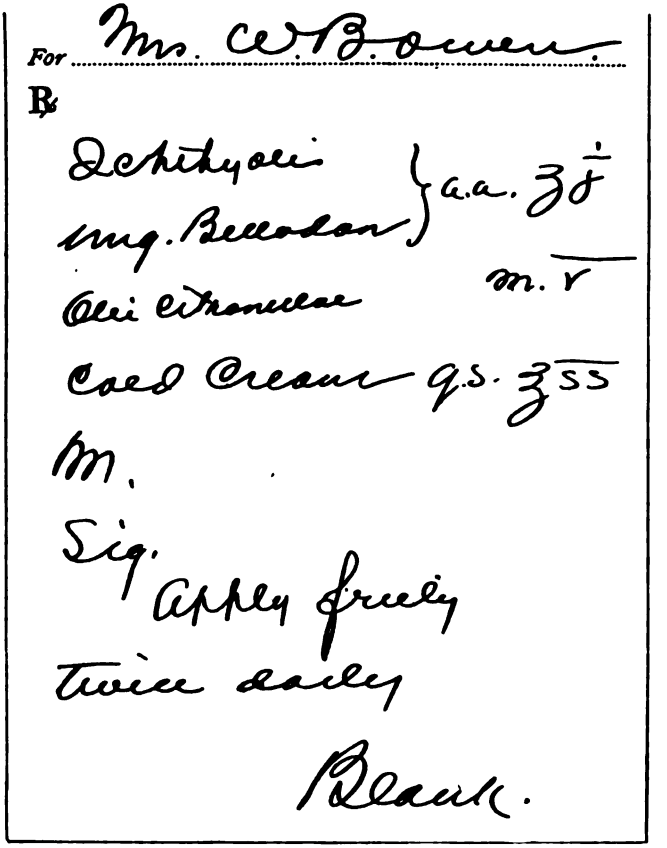
The prescription should be signed.





Experience has taught that it requires a considerable effort to get the salt distributed through the vehicle in a sufficient degree of fineness. Particles of any appreciable size are apt to be distinctly irritating. It is well, therefore, to instruct that the druggist "rub well."

Prescribed for acute mastitis.


For Mrs. C. W. Bowen.

℞

Ichthyoli
Ung. Belladon } a.a. ℥ss
Olei citronellae m. v

Cold Cream q.s. ℥ss

M.

Sig. Apply freely
twice daily

Black.

When a small quantity of an oil is wanted for flavoring it is better to prescribe drops, as 5 minims are not easily measured.

Cold Cream is not the official name of the preparation wanted.

The quantity of the ointment is entirely too small for the purpose intended.

The abbreviation *a.a.* is both improperly made and placed.

For Mrs. W. B. Owen.

℞

Ichthyolis,

Ung. Belladon., āā. ʒiv

Olei Citronellae, gtt. v

Ung. Aquae Rosae, q.s. ʒij

M.

Sig. Apply freely

twice a day.

Blank.

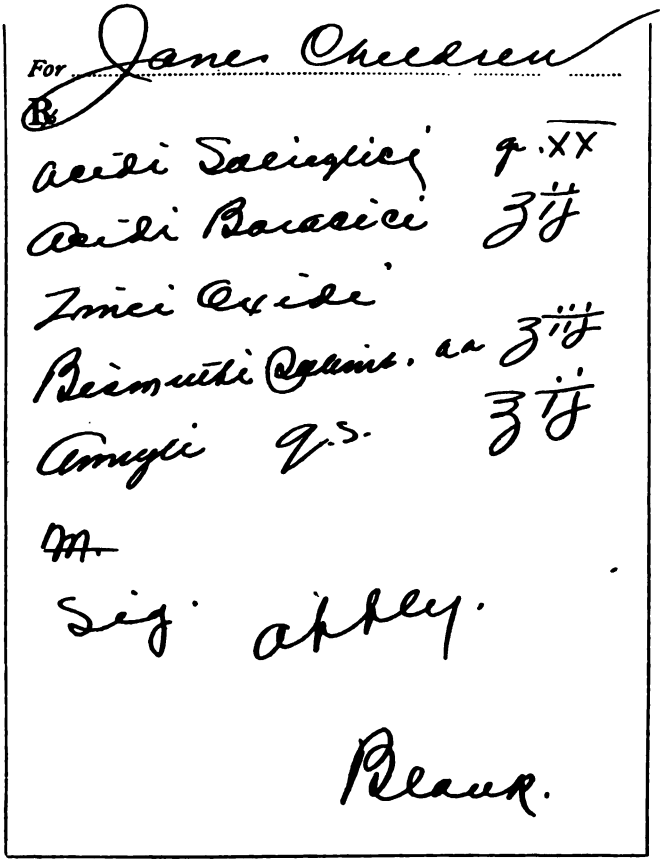
This formula is frequently employed for such conditions as orchitis, infected hands and feet, etc.

Ammoniated mercury is frequently added when an active antiseptic is desired.

The area is often painted with tincture of iodine before applying ointment. If iodine is used mercury must be omitted.

Camphor and phenol are frequently employed additions to the above.

This has been used for prickly heat.

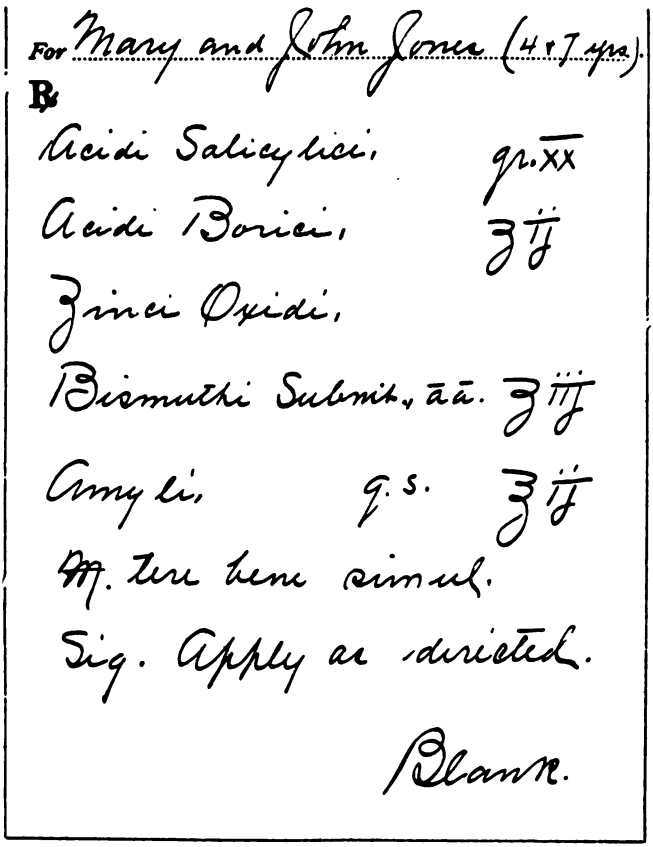


The manner of giving the name of patient might be improved upon.

Boracic Acid is not the name of the drug wanted.

It would be well to emphasize the fact that the ingredients should be rubbed well.

If the directions for applying are too long to put on a label it would be well to remind patient that there is a special method of employment.


For Mary and John Jones (4 & 7 yrs).

℞

Acidi Salicylici, gr. XX

Acidi Borici, ʒ ij

Zinci Oxidi,

Bismuthi Subnit., āā. ʒ iij

Amyli, q. s. ʒ ij

M. Ft. pulvis simul.

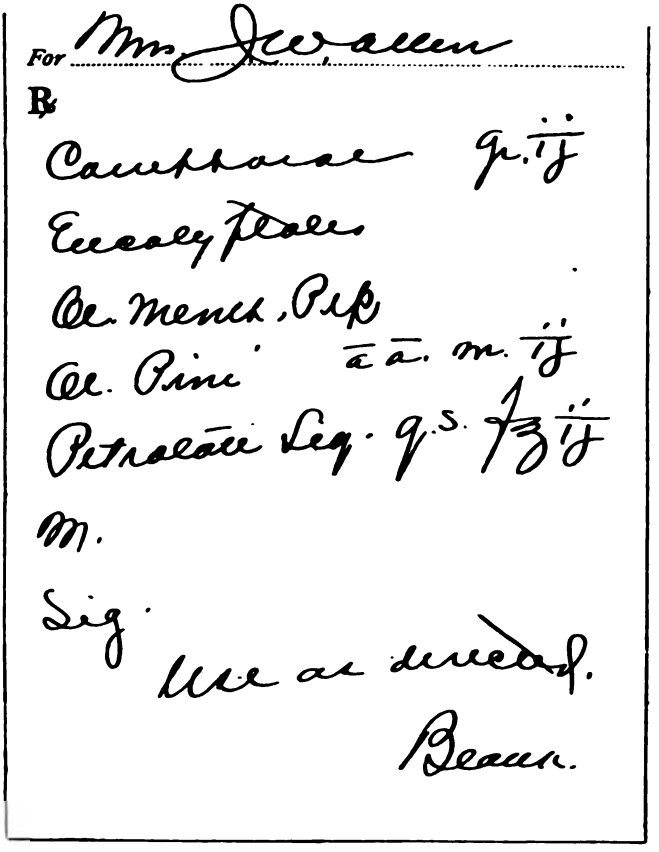
Sig. Apply as directed.

Blank.

If there are too many children to specify, it would be better to write as *Mr. Jones's Children.* The ages are unimportant here, but it is a good habit to always specify, if possible.

Written instructions may be given the nurse, as "Put the powder in a cloth bag and apply three times daily by gently patting the affected parts after bathing." Frequency of bath would depend on the weather, condition of patient, etc.

The following has been ordered as a spray in the treatment of rhinitis, nasal catarrh, etc.:



As 2 minims cannot well be measured in the average pharmacy, it would probably be well to prescribe drops.

Atomizers are usually so constructed that a larger amount of the liquid would be necessary for the best results if the treatment was many times repeated.

It would be well to indicate in the directions the use of the preparation.

For Mr. J. W. S. Allen

℞

Camphorae, gr. iv

Eucalyptolis,

Ol. Pini Sumil.,

Ol. Menth. Pip., āā gtt. iv

Petrolati Liq., q.s. ℥iv

M.

Sig.- Spray twice daily as directed.

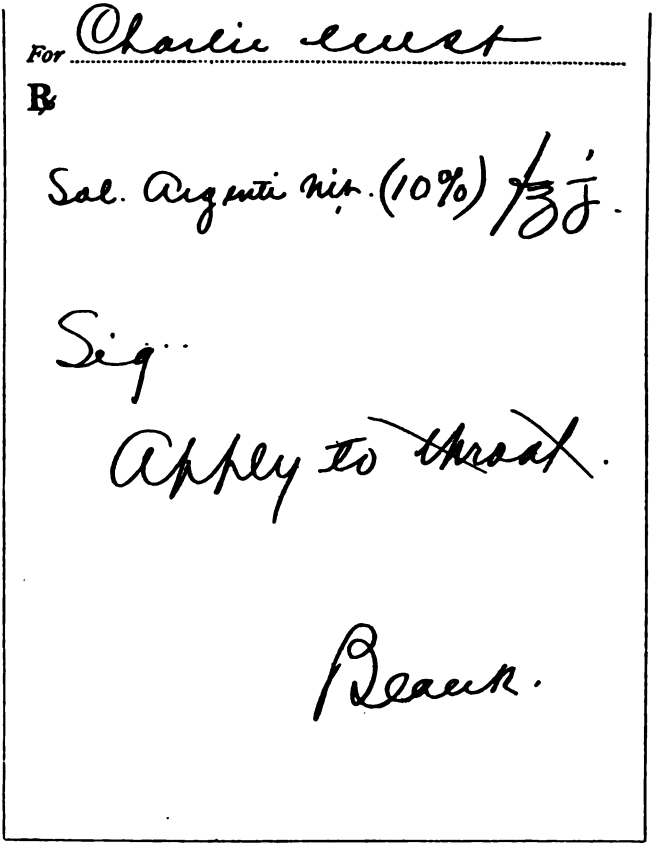
Blank.

This character of remedy is usually employed to follow an aqueous cleansing spray.

The tendency of the profession seems to be to make their oil solutions rather irritating by ordering too much of the volatile oils.

Particular attention is called to the use of the official liquid petrolatum as a vehicle to replace less ethical products.

Ordered for the use of the physician as a local application in the treatment of follicular tonsillitis.



It is preferable for many reasons for the prescriber to specify the actual amount of each ingredient.

This, of course, would be too dangerous a preparation for the layman to use, and when having the patient purchase for the physician's use it is better to so specify.

It would be well to order the bottle labeled "Poison" or "Not to be taken."

For Charlie West (10 yrs.).

℞

Argenti Nitratis, gr. XLV

Aquae Dest. q. s. ℥ j

M.

Sig. "Poison"

For Physicians use.

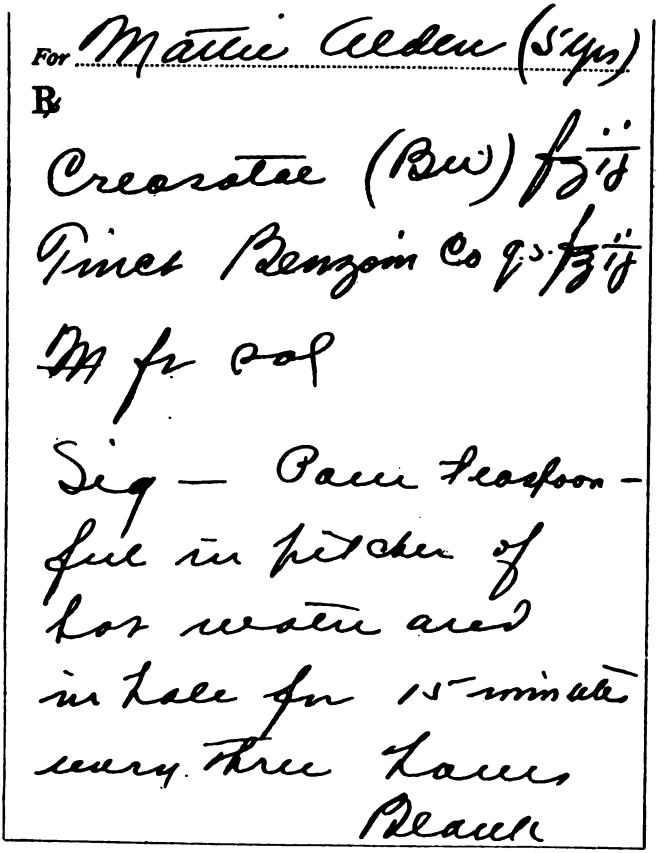
Blank.

This method of writing for a percentage solution prevents the possibility of trouble through mathematical error on the part of some incompetent clerk. It enables the prescriber to specify distilled water.

A *Poison* or *Not to be taken* label is certainly desirable.

In some instances the physician, in having the patient get medicine for his own use, can to advantage order the formula for a label, as: Sig.—Formula.

For a case of acute bronchitis.



Creosotum does not have the genitive ending æ.
B. W., standing for beechwood, is now useless and unnecessary.
It is unnecessary to specify that solution be made.
The directions are too long.

For Mattie Alden (5 yrs.).

℞

Creosati, ℥ij

Tinct. Benzoini Co., q.s. ad ℥ij

M.

Sig. Use teaspoonful every three hours as directed.

Dr. Clark.

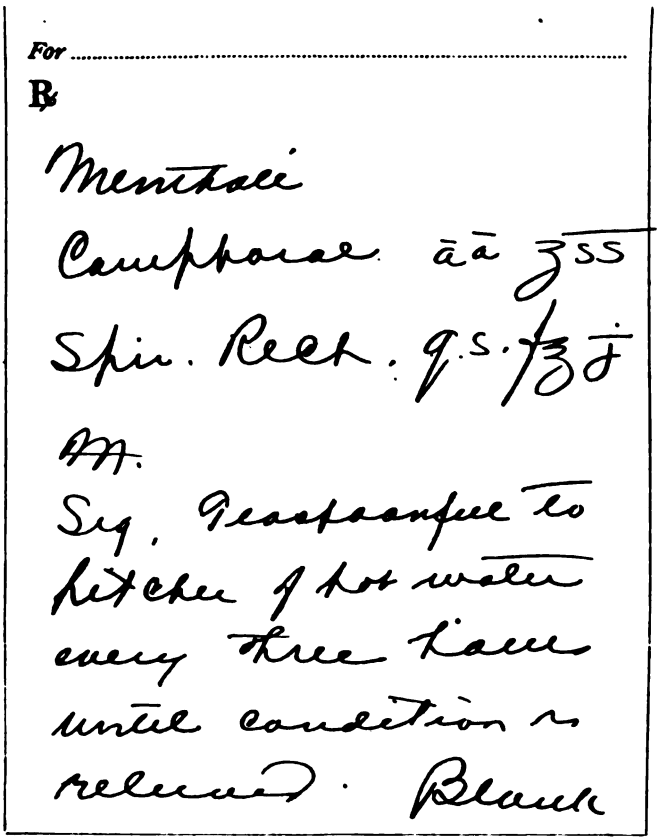
Written instructions as to the use of this should be left with the family.

It is usually employed by the patient holding the head over pitcher or by making a tent to cover both. An open newspaper answers very well.

It must be prepared fresh for each inhalation.

It may be administered to small children during sleep.

Prescribed as an inhalation in rhinitis with involvement of the accessory sinuses.



The name of the patient should be given.

The proper termination is not used for the genitive of menthol.

Spiritus Rectificatus is not the proper name of the drug desired.

When a liquid is not to be taken internally the first word of the directions should so indicate.

The directions are too long for the size of the label available.

For Mr. John Smith.

℞

Mentholis,

Camphorae, āā. ʒss

Alcoholis, q.s. fʒj

M.

Sig. Use Teaspoonful

to Pitcher of hot

water as directed.

J. Glenn.

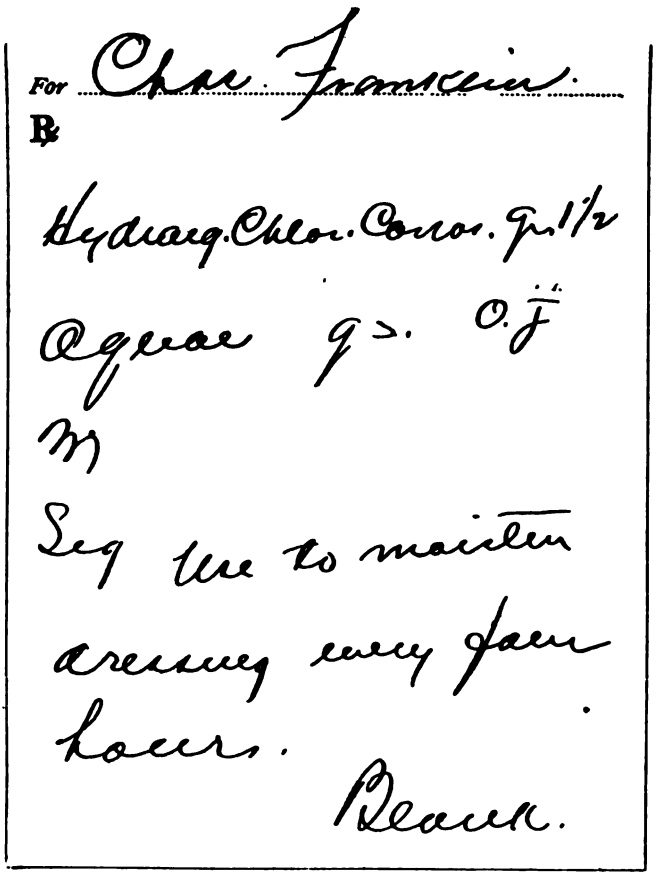
This should not be used for a young child on account of the effect of menthol on the eyes. Patients should be instructed to keep the eyes tightly closed while using.

Written instructions should be left with patient as to frequency and duration of inhalation. Usually for about five minutes two to four times a day.

This is frequently employed in certain forms of asthma.

The Compound Tincture of Benzoin is frequently used instead of the Alcohol.

Prescribed as a wet dressing for an infected hand.



Information as to the age of the patient should be given.

The quantity of the salt can be better expressed.

A soluble salt of mercury should never be ordered in ordinary water.

A solution of this character should usually be prescribed in a more economical form.

A poison label should be ordered.

For Mr. Chas. Franklin.

℞

Hydrarg. Chlor. Corros., gr. ij

Acidi Tartarici, gr. xx

Aquae Dest., q. s. ʒiij

M.

Sig. "Poison"

Use one part to ten parts of water to moisten dressing.

F. Blank.

As did the other prescription, this gives a solution of about 1 to 5000.

The economy of the above is self-evident, as the druggist usually considers bulk an important factor in determining price.

The value of the addition of tartaric acid hardly needs discussion.

Written instructions should be given the family as to changing the dressing to prevent too great concentration by evaporation, also as to frequency of use, etc.

For Miss Annie Smith.

℞

Potassii Permangan. ʒiiij

Aquae q.s. ad ℥iij

M.

Sig. "Not to be taken"

Use teaspoonful to

gallon of hot water

as a douche.

Blank.

The full name of the patient may well be omitted.

The salt is only partially soluble in the amount of vehicle ordered.

Distilled water should be used.

The word douche may be omitted as the "gallon of hot water" would prevent other use of the remedy, and more complete instructions should be left with the patient, anyway.

For Miss. S-

℞

Potassii Permangan., ʒ iiij

Aquae Dest., q.s. ad ʒ viij

M.

Sig. "Not to be taken."

Use Tablespoonful to gallon of hot water as directed.

Blank.

More complete written instructions should, of course, be left with patient. These may include the position of patient, elevation of reservoir, temperature of the water, etc.

It will be noted that the above gives a solution of about 1 to 5000.

It is a convenient method of prescribing the drug.

For Mary Jacobs (5 yrs)
℞
Acidi Carbolici m. XXV
Glycerinae fʒ j
M. Sig.
Use as directed
Blank.

Prescribed for earache in a child 5 years old.

The prescription should be better placed on the sheet.

Carbolic Acid is not the official name of the drug wanted.

Carbolic Acid is a solid; so should not be prescribed by minims.

Glycerin is the English name of the drug.

If 1 fluidounce of the mixture is wanted the glycerin should be q. s.

More definite directions should be used, particularly as this is a poison for local use.

Phenol is a crystalline solid; so should be prescribed in grains.

Liquefied phenol is a liquid obtained by melting phenol and adding 10 per cent. of water so that it will not recrystallize.

While 1 ounce is far in excess of the needs of the patient it is not usually advisable to order less of a fluid, as there is no saving in price, and the ounce bottle is more convenient for label, handling, etc.

For Mary Jacobs (5 yrs.)
℞
Phenolis liq., m. XXV
Glycerini, q. s. fʒ j
M.
Sig Two (2) drops
in ear when necessary.
Blank

Ordered as a local application for tonsillitis, enlarged cervical glands, etc.

Even in the case of children it is best to employ the correct name. The surname should also be given.

The quantity is too large for the purpose desired.

Tr. is not the best abbreviation for tincture.

Iodidi is not the genitive for the Latin name of Iodine.

Margins should be better observed.

For Johnnie

℞

Tr Aconite

Tr. Iodi āā. ℥jj

M.

S. "Poison"

Paint the neck twice daily.

Beach.

For John White (5 yrs).

℞

Tinct. Iodi,

Tinct. Aconiti, āā. ℥ss

M.

Sig. "Poison"

Paint over swelling

twice daily.

Flanner.

"Paint the neck" was probably not sufficiently definite, as only a comparatively small part is usually to be covered. It is best, when possible, for the physician to make the first application to show family the method of applying and the area to be covered.

An application will sometimes be kept up indefinitely unless instructions are given as to when to discontinue.

This constitutes the well-known "Iodine and Aconite" of the dentist. It is used by them for toothache, etc.

For M. J. B. Rogers

℞

Mentholis ℥ss

Chloroformi ℥iv

Lin. Saponis ad. ℥viij

M.

Sig. As directed.

L. Blank.

Used with massage on a patient suffering from soreness following violent exercise.

Chloroform does not have the genitive ending *is*.

A prescriber should have some definite term for each purpose, and **q. s.** seems more desirable than **ad**, though the latter is entirely correct.

The quantity is too small for the purpose intended.

The directions may be improved upon.

This is probably best used following a hot bath.

It may be made to act as a better rubefacient by covering for a short time with the hands or a woollen cloth.

Camphor is sometimes added to the above.

The use of a liniment of this type is frequently preceded by the applications of hot turpentine steeps.

For M. J. B. Rogers

℞

Mentholis. ℥ij

Chloroformi. ℥ij

Lin. Saponis q. s. ad ℥viij

M.

Sig. Apply with massage twice daily.

Blank.

Prescribed as a local application in orchitis complicating mumps.

For Mr. B. L. Johnson
℞

Guaiacoli Liq. ℥ss
Ol. Olivae q.s. ℥ij
M.
Sig. Teaspoonful
twice daily
Blank.

The arrangement on the sheet is not good.

Guaiacol is usually a liquid; so it is unnecessary to specify.

The majority of liquid prescriptions are for internal use. Such is understood where specifications are not to the contrary.

If a preparation is not to be administered by mouth the directions should, with rare exceptions, indicate the fact.

For Mr. B. L. Johnson.
℞

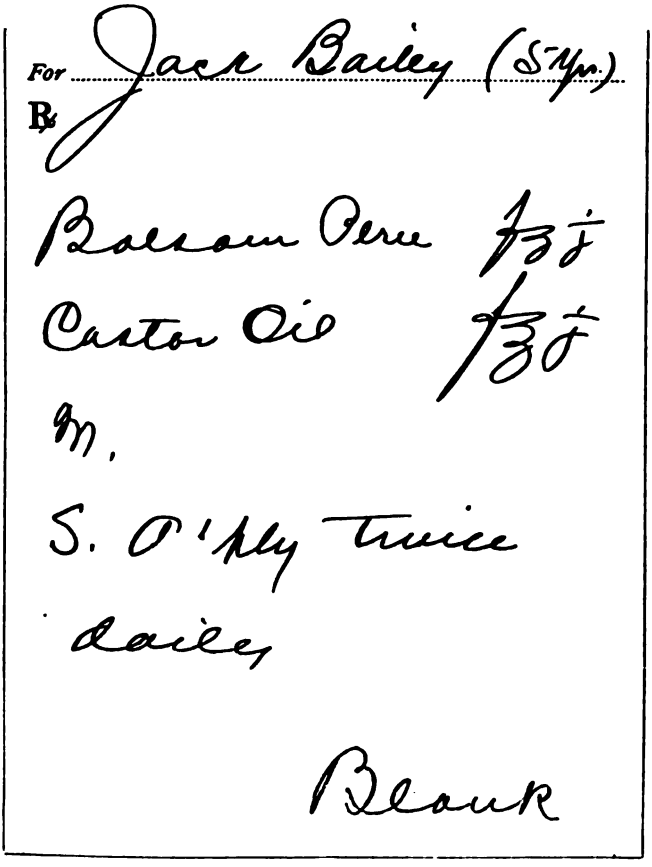
Guaiacolis, m.xl
Ol. Olivae, q.s. ℥ij
M.
Sig.
Apply a Teaspoonful
to swelling twice
daily.
Blank.

This is frequently used during the febrile stage.

As this usually lasts only about four days or less, a fluidounce is all that is necessary.

In prescriptions for local use it is better to have the first word of the directions call attention to the fact that it is not to be taken.

Prescribed for a small superficial burn.



It would be better to order the ingredients by their official titles.

Such a small quantity as a fluidrachm of a thick, tenacious liquid is best ordered by weight.

A shake-label should be used.

The total quantity should be made to suit containers in common use.

For Jack Bailey (5 yrs.)

℞

Bal Peruviani, ℥ss

Olei Ricini, q.s. ad ℥ss

M.

Sig. "Shake"

Apply twice daily.

Blank.

This does not make a clear solution, so should be shaken before used.

A larger percentage of the balsam is frequently employed, but may irritate if long applied.

Two fluidounces of a preparation of this character will usually be dispensed at the same price as the above.

APPENDIX.

Problems and Blackboard Exercises.

In the following pages are given some problems and exercises such as are met every day in the practice of medicine. No attempt is made to cover the entire field, but it is hoped that enough and sufficient variety is given to be of advantage in the study of materia medica and prescription writing. They are also so arranged as to amount to a quiz on many important points in posology, toxicology, metrology and other phases of the subjects. The author begs to acknowledge his rather remote acquaintance with arithmetic, and the discussions, from this standpoint, may seem rather crude and void of system to better scholars, but the effort was made to illustrate different methods of reasoning out the desired results, and the reader can make his choice or be led to improve on any of the lines suggested. In teaching medical students, the urgent need of exercises of this character has been thoroughly demonstrated.

The common preparations of opium,—tincture of opium, tincture of deodorized opium, camphorated tincture of opium and powder of ipecac and opium,—are made from the powdered or granulated opium, which now contains about 10 per cent. of morphine. In giving opium, or its preparations, a smaller dose is employed than the morphine content would indicate, for it must be remembered that there are other active ingredients, particularly codeine.

---

(1) How much opium; how much morphine, in:

(*a*) 5 drops of laudanum?

(*b*) 10 drops of paregoric?

(*c*) 5 grains Dover's powder?

Discussion.

(*a*) Laudanum, as most other tinctures, gives about 2 drops to the minim—usually a little more than 2 drops. One minim of laudanum represents about 0.1 ($\frac{1}{10}$) grain of opium, or 0.01 ($\frac{1}{100}$) grain of morphine. Five drops, which would be a little more than 2 minims, would represent a little more than $\frac{1}{8}$ grain of opium and $\frac{1}{50}$ grain of morphine.

(*b*) Paregoric represents 0.4 per cent. of opium, or about 0.04 per cent. of morphine. One minim would, therefore, represent about 0.004 grain opium, or 0.0004 grain morphine. Ten drops would be about 4 minims, and would represent about 0.016 ($\frac{1}{60}$) grain opium, or 0.0016 ($\frac{1}{600}$) grain morphine, or

Paregoric represents 4 parts of opium to 1000, or 1 to 250; 1 minim would, therefore, represent $\frac{1}{250}$ of a grain, and 4 minims would represent $\frac{4}{250}$ ($\frac{1}{60}$) of a grain; $\frac{1}{10}$ of this ($\frac{1}{600}$) would be morphine.

(*c*) Dover's powders contain 10 per cent. of opium, so 10 grains would contain 1 grain of opium, or 5 grains would contain $\frac{1}{2}$ grain of opium; $\frac{1}{10}$ of this would be morphine—$\frac{1}{10}$ of $\frac{1}{2}$ is $\frac{1}{20}$ (grain of morphine).

---

(2) How much morphine in:

(*a*) 2 grains powdered opium?
(*b*) $\frac{1}{2}$ grain extract of opium?

Discussion.

(*a*) Powdered opium contains about 10 per cent. of morphine, so $\frac{1}{10}$ of it is morphine. If 1 grain of opium contains $\frac{1}{10}$ grain of morphine, 2 grains contain $\frac{2}{10}$ ($\frac{1}{5}$) grain morphine.

(*b*) Extract of opium contains about 20 per cent. of morphine—20 per cent. of 1 grain would be $\frac{1}{5}$ grain; 20 per cent. of $\frac{1}{2}$ grain would be $\frac{1}{10}$ grain; or—20 per cent. is 20 to the 100—100 grains of the extract contain 20 grains of morphine, so 1 grain of the extract contains $\frac{1}{5}$ grain of morphine and $\frac{1}{2}$ grain of the extract contains $\frac{1}{2}$ that much, or $\frac{1}{10}$ grain.

---

(3) A man phones that his wife has swallowed a tablespoonful of laudanum.

(*a*) How much opium did the patient get?
(*b*) How much morphine?
(*c*) Relation of amount to average dose?

Discussion.

(*a*) A tablespoonful is about 4 fluidrachms or 240 minims. If laudanum represents 10 per cent. of opium, 240 minims of the tincture would represent 24 grains of the drug.

(*b*) If opium contains 10 per cent. of morphine, 24 grains of opium contains $\frac{1}{10}$ as much, or 2.4 ($2\frac{4}{10}$) grains of the alkaloid.

(*c*) As the dose of opium is 1 grain and morphine $\frac{1}{8}$ grain, this patient received over twenty times the average dose.

---

(4) A lady phoned that a child 2 years old had been given a teaspoonful of paregoric by mistake, and what should she do till medical attention arrived?

(*a*) How much opium had the child received?
(*b*) How much morphine?
(*c*) Relation of morphine received to an average dose for a child that age?

Discussion.

(*a*) Paregoric contains 4 parts of opium to the 1000; therefore, 1 minim contains $\frac{1}{250}$ grain of opium; 60 minims (1 teaspoonful) contains sixty times as much, or $\frac{60}{250}$, or about $\frac{1}{4}$ grain opium.

(*b*) As opium contains about 10 per cent. of morphine, 1 grain opium contains $\frac{1}{10}$ grain morphine, and $\frac{1}{4}$ grain opium contains $\frac{1}{40}$ grain of the alkaloid.

(*c*) A child 2 years old would usually receive $\frac{1}{7}$ of the adult dose (Young's rule). If the dose of morphine is $\frac{1}{8}$ grain, this child would take $\frac{1}{7}$ as much, or $\frac{1}{7}$ of $\frac{1}{8} = \frac{1}{56}$. So the morphine received is to the average dose as $\frac{1}{40}$ is to $\frac{1}{56}$, or about $\frac{1}{8}$ more than the average. It should be remembered that opium contains other active agents, so the child received equal to about twice an average dose of morphine, but hardly a toxic quantity.

---

(5) Through error the tincture of deodorized opium was ordered in place of paregoric in what was intended to be this prescription:

(Adult) Date,

℞

Bismuthi Subnit. ..... ℥iij
Tinct. Opii Camph. ..... f℥iij
Mist. Cretæ .....q. s. f℥iij
M.
Sig.—Tablespoonful every four hours. (Shake-label.)

How much opium per dose did patient get?
How much morphine?
Relation to average dose?

Discussion.

As the tincture of deodorized opium represents 10 per cent. of the drug, 3 fluidrachms (180 minims) would represent about 18 grains of opium, or about 1.8 grains morphine.

Three fluidounces contain 6 tablespoonfuls, so the patient would receive in each dose about 3 grains opium or about 0.3 (⅓) grain morphine.

This would be about three times the average dose, but hardly a toxic quantity under ordinary circumstances, unless repeated.

---

(6) Write a prescription for suppositories that will contain a sufficient amount of some preparation of opium to give about 15 mg. of morphine to each suppository.

Discussion.

If 1 grain is about 65 milligrammes, 15 mg. is about ¼ grain. The extract of opium contains practically no refuse matter and is the preparation usually employed for suppositories. It contains 20 per cent. (⅕) of morphine, so to get 1 part of the alkaloid 5 parts of the extract must be employed. Five times ¼ grain is 5/4, or 1¼ grains, and this much of the extract must be in each dose. If 4 doses are desired, it would be 4 times 1¼ grains, or 5 grains.

Heading showing doctor's name, address, registry number, etc.

Name and address of patient. Date,

℞

Ext. Opii ..... gr. v

Ol. Theobromatis ..... q. s.

M. ft. suppos. no. iv.

Sig.—Use one twice daily.

Signature.

It should be remembered that extract of opium contains other active ingredients than morphine.

While Nux Vomica and its preparations are now standardized on their total alkaloidal content, they probably contain about the percentage of strychnine as required in the U. S. P. viii, that is,

Nux vomica about 1.25 per cent.

Flext. of nux vomica about 1 per cent.

Extract of nux vomica about 5 per cent.

Tincture of nux vomica about 0.1 per cent.

(7) A physician stated that his favorite tonic was tincture of nux vomica in 5-drop doses.

How much strychnine did his patients receive?

Discussion.

Five drops of tincture of nux vomica averages a little more than 2 minims. One minim contains about $\frac{1}{1000}$ of a grain of strychnine, and 2 minims about $\frac{1}{500}$ (or $\frac{1}{400}$) of a grain of strychnine.

---

(8) A physician was surprised that he was able to gradually increase the dosage of tincture of nux vomica till the patient was taking 50 drops.

How much strychnine was the patient receiving?

Discussion.

Fifty drops would average between 20 and 25 minims, probably about 20. One minim contains about $\frac{1}{1000}$ of a grain of strychnine; 20 minims contain about $\frac{20}{1000}$, or $\frac{1}{50}$ of a grain of strychnine.

---

(9) Write a prescription for tincture of nux vomica, alone, and instruct the patient to begin with enough drops to represent about $\frac{1}{100}$ grain of strychnine and increase to about $\frac{1}{40}$ grain.

Discussion.

If tincture of nux vomica contains about 0.1 per cent. of strychnine, 1000 minims would contain about 1 grain, 1 minim about $\frac{1}{1000}$ of a grain, or 10 minims about $\frac{1}{100}$ of a grain, and 25 minims about $\frac{1}{40}$ grain (1000 divided by 40 = $\frac{1000}{40}$ = 25). Allowing 2 drops to each minim, the prescription would be as follows:

Name, etc. Date,

℞

Tinct. Nucis Vomicæ ..... f℥ij

Sig.—Twenty (20) to fifty (50) drops in water as directed.

Signature.

---

(10) Write a prescription for a tonic, in thirty capsules, containing enough extract of nux vomica to represent an average dose of strychnine.

Discussion.

Extract of nux vomica contains about 5 per cent. of strychnine, so 100 grains of the extract contains about 5 grains of the alkaloid, or 20 grains

of the extract contains 1 grain of the alkaloid. The dose of strychnine is 1/40 grain, so the amount of the extract to contain this much is found by taking 1/40 of the amount that contains 1 grain (1/40 of 20 = 20/40 = 1/2). If 1/2 grain of the extract is to be given at each dose and there are 30 doses, the total is thirty times 1/2 grain or 15 grains.

Name, etc. Date,

℞

Arseni Trioxidi ..... gr. j
Ext. Nucis Vomicæ ..... gr. xv
Mas. Ferri Carb. ..... gr. cl
M. ft. cap. no. xxx.
Sig.—One after each meal.

It should be remembered that nux vomica contains other active ingredients than strychnine, so about 10 grains would probably be nearer the amount wanted in the prescription.

---

(11) Write a prescription for an adult for a 4-fluidounce tonic containing enough tincture of nux vomica to give an average dose of strychnine.

Discussion.

The average dose of strychnine is 1/40 grain. Tincture of nux vomica contains about 0.1 per cent. of strychnine, or 1000 minims contain about 1 grain, so the number of minims for 1/40 of a grain is 1/40 of 1000 (1000/40 = 25).

Four fluidounces, teaspoonful dose, gives about 32 doses, so the total amount of the tincture is twenty-five times 32 or 800 minims, or about 13 fluidrachms or about 1½ fluidounces. The prescription might be written as follows:

Name, etc. Date,

℞

Tinct. Nuc. Vomicæ ..... f℥iss
Tinct. Cardam. Co. .....q. s. f℥iv
M.
Sig.—Teaspoonful in water before meals.

It should be remembered that nux vomica contains other active constituents besides strychnine, so the dose is not altogether as would be indicated by the strychnine content. In this prescription 1 fluidounce of the tincture would probably be nearer the correct amount.

---

(12) Complete the following so that the patient will get an average dose of strychnine for a child her age:

For Mary Jones (4 years). Date,

℞

Tinct. Nux Vomicæ,

Liq. Ferri Pep. cum Mang. ..... f℥vj

M.

Sig.—Teaspoonful in water after meals.

Discussion.

The tincture of nux vomica contains about 0.1 per cent. of strychnine, therefore 1000 minims contain about 1 grain.

The average dose of strychnine for an adult is $\frac{1}{40}$ grain. A child 4 years old would usually receive $\frac{1}{4}$ of the adult dose (Young's rule), or $\frac{1}{160}$ grain strychnine. If 1000 minims of the tincture contains about 1 grain of the alkaloid, the number of minims for $\frac{1}{160}$ of a grain would be found by taking $\frac{1}{160}$ of 1000 (1000 divided by 160 = $\frac{1000}{160}$ = about 6 minims).

The prescription contains 48 doses (teaspoonfuls), so 48 times 6 is the total amount of minims required (48 x 6 = 288 or about 4½ or 5 fluidrachms).

It should be remembered that nux vomica is not given altogether in the dose as indicated by the strychnine content as it contains some other active ingredients. Also some claim that strychnine in full proportional doses is not well tolerated by some children.

---

(13) A child 2 years old received 1 drop of tincture of belladonna leaves. What is the relation to average adult dose?

Discussion.

The average dose of tincture of belladonna leaves is 12 minims. A child 2 years old usually takes $\frac{1}{7}$ of an adult dose (Young's rule); $\frac{1}{7}$ of 12 minims equals $\frac{12}{7}$, or about 1⅝ minims. One drop is about ½ minim, so the child receives about ⅓ of the average dose. It should be remembered that size, sex, etc., should also be considered.

---

(14) What is the approximate percentage of alkaloid in the following prescription:

℞

Ung. Belladon.,

Ung. Zinci Ox. .....āā ℥ij

Petrolati .....q. s. ℥j

M.

Discussion.

This prescription contains 25 per cent. of belladonna ointment. Belladonna ointment contains 10 per cent. of the extract (as other vegetable

ointments). The extract is about five times as strong as the drug (as most other extracts). The leaves contain 0.3 per cent. of alkaloids, principally atropine. If the ointment of belladonna represents 10 per cent. of the extract, which is five times as strong as the drug, it represents 50 per cent. of the drug, and a preparation containing 25 per cent. of this would represent 12.5 per cent. of the drug (0.50 x 0.25 equals 0.125). The drug containing about 0.3 per cent. of alkaloids, the preparation would contain 0.3 per cent of 12.5 per cent. (0.003 x 0.125 = 0.000375) or 0.0375 per cent. of alkaloids. This, of course, could be calculated directly from the alkaloidal content of the extract, but the student does well to remember the content of the drug, and, for approximate work, the foregoing answers well.

---

(15) Write a prescription for Fowler's solution, alone, to be taken by drops, so that the patient will get the equivalent of $\frac{1}{25}$ grain of arsenic trioxide to each dose.

Discussion.

Fowler's solution (as most other solutions) averages about a drop to the minim. It represents 1 per cent. of arsenic trioxide, therefore 100 drops would represent about 1 grain of the salt, 1 drop about $\frac{1}{100}$ of a grain, 4 drops about $\frac{4}{100}$ or $\frac{1}{25}$ of a grain. It should be remembered that drops vary in size owing to style of dropper, rapidity of dropping and many other conditions.

---

(16) A patient taking Fowler's solution after meals, gradually increased to 9 drops per dose before showing toxic symptoms. How much, and of what salt, was he getting per day?

Discussion.

In making Fowler's solution 1 per cent. of arsenic trioxide is used. This is acted upon by potassium bicarbonate to form potassium arsenite, which is the form in which arsenic is present in the solution. If the solution represents 1 per cent. of arsenic trioxide, 1 minim would represent $\frac{1}{100}$ of a grain, 9 minims would represent $\frac{9}{100}$ of a grain or about $\frac{1}{10}$ grain as a dose. Three doses a day would give a total of nearly $\frac{1}{3}$ of a grain.

---

(17) Write a tonic prescription (for an adult) containing solution of arsenous acid in such amount that there will be an average dose of arsenic trioxide to each teaspoonful of the preparation.

Discussion.

Solution of arsenous acid contains 1 per cent. of arsenic trioxide, or about 1 grain to each 100 minims or $\frac{1}{100}$ of a grain to each minim. The dose of arsenic trioxide is $\frac{1}{30}$ grain, so it would take about $3\frac{1}{3}$ minims of the solution to give an average dose of the salt, and each teaspoonful of the prescription must contain that much. A prescription for 4 fluid-ounces would contain about 32 doses, so multiply this (32) by the $3\frac{1}{3}$ minims (for each dose) and the total amount is obtained—$3\frac{1}{3} \times 32 = 107$. In practice we would use $1\frac{1}{2}$ or 2 fluidrachms.

Name, etc. Date,

℞

Liq. Acidi Arsenosi ..... f℥ij
Elix. Ferri, Quin. et Strych. Phos. ..... f℥iv
M.
Sig.—Teaspoonful in water after meals.

---

(18) The Pharmacopœia gives $1\frac{1}{2}$ minims as the average dose of Donovan's solution.

(*a*) How much, and of what, does this dose contain?

(*b*) How do these amounts compare with the average doses of these salts?

(*c*) Based on the average doses of its contents, what would be a safe dose of the solution?

Discussion.

(*a*) Donovan's solution contains 1 per cent. each of arsenous iodide and red mercuric iodide, therefore 100 minims contain about 1 grain each of the salts, 1 minim contains $\frac{1}{100}$ of a grain each, $1\frac{1}{2}$ minims contains about $\frac{1}{66}$ of a grain of each.

(*b*) The average dose of arsenous iodide is $\frac{1}{10}$ grain, of red mercuric iodide $\frac{1}{20}$ grain, so the dose of the solution as stated would be about $\frac{3}{20}$ of the average dose of the arsenic salt and $\frac{3}{10}$ of the dose of the mercuric salt.

(*c*) Five minims would contain the average dose of the mercuric salt and $\frac{1}{2}$ the average dose of the arsenous salt.

---

(19) A physician wished to prescribe the tincture of digitalis in drops so that the dose could be easily changed as conditions might require. Write the prescription so that the patient will begin with about 20 minims at a dose.

Discussion.

The tincture of digitalis, as most other tinctures, averages a little more than 2 drops to 1 minim.

Patient's name, etc. Date,

℞

Tinct. Digitalis ..... f℥ij

Sig.—Begin with forty (40) drops in water as directed.

(Over) Signature.

On the back of the prescription it is well to specify "Dispense a physiologically standardized, fat-free tincture of digitalis."

---

(20) Write a prescription for tincture of digitalis so that the patient will get 15 minims in each teaspoonful.

Discussion.

If the prescription is to contain 15 minims to each fluidrachm (teaspoonful), it would have to contain eight times as much to each ounce—8 x 15 = 120 minims = 2 fluidrachms. Or, as 15 minims is ¼ of a teaspoonful, ¼ of the prescription must be for tincture of digitalis.

Name of patient, etc. Date,

℞

Tinct. Digitalis ..... f℥iv

Tinct. Cardam. Co. .....q. s. f℥ij

M.

Sig.—Teaspoonful in water 3 times a day.

(Over) Signature.

It is well to write on the back of the prescription blank, "Use a physiologically standardized, fat-free tincture of digitalis."

---

(21) Write a prescription in the metric system calling for 60 capsules, each containing an average dose of a strychnine salt, an arsenic salt and about 2 grains of actual $FeCO_3$.

Discussion.

Ferrous carbonate is on the market only in the form of its preparations. The mass is used for capsules, and contains about 35 per cent. of the salt, so 6 grains would be required for each capsule. The average dose of strychnine sulphate is 1/40 grain, of arsenic trioxide is 1/30 grain; 60 doses would require sixty times these amounts, or

60 x 1/40 or $^{60}/_{40}$ equals 1½ grains strych. sulphate.

60 x 1/30 or $^{60}/_{30}$ equals 2 grains arsenic trioxide.

60 x 6 or 360 grains mass of ferrous carbonate.

Using the rule for transposing (see p. 336) we would have about as follows:

Name of patient, etc. Date,

℞

Strychninæ Sulph.	100
Arseni Trioxidi	130
Mas. Ferri Carb.	24 000

M. ft. cap. no. LX.

Sig.—One after each meal.

Signature.

---

(22) How much actual ferrous iodide in the U. S. P. average dose of the syrup?

Discussion.

As the syrup contains 5 per cent. of the salt, 1 minim contains about $\frac{1}{20}$ of a grain; 15 minims (the average dose) contains $\frac{15}{20}$ or $\frac{3}{4}$ grain.

---

(23) A common vehicle is chloroform water in tablespoonful doses. How much chloroform to each dose?

Discussion.

As chloroform is soluble in about 200 parts of water and the official chloroform water is a saturated solution, 200 minims of the water would contain 1 minim of chloroform, 240 minims (1 tablespoonful) would contain $\frac{240}{200}$ or $1\frac{1}{5}$ minims of chloroform.

---

(24) In treating certain gastro-intestinal pains, the spirit of chloroform is recommended in ½ teaspoonful doses. How much chloroform to each dose?

Discussion.

As the spirit of chloroform is a 6 per cent. solution, and a half teaspoonful is 30 minims, the answer is obtained by finding 6 per cent. of 30. $30 \times 0.06 = 1.80$ (minims of chloroform).

---

(25) A doctor orders a spray of 2 fluidrachms of the solution of hydrogen dioxide to each 6 fluidrachms of water (each fluidounce of the finished prescription). What percentage of H_2O_2 in the preparation, and how many volumes of available oxygen?

Discussion.

Two fluidrachms to the fluidounce gives a 25 per cent. solution. The official preparations contain 3 per cent. of H_2O_2, so the prescription would contain 25 per cent. of 3 per cent., or 0.25 x 0.03 equals 0.0075 or 0.75 per cent. The official preparation contains 10 volumes of available oxygen. If the prescription contains 25 per cent. of the solution, it would contain 25 per cent. of as many volumes of oxygen—25 per cent. of 10 = 0.25 x 10 = 2.50 (2½ volumes of available oxygen).

---

(26) How much ether in a teaspoonful of Hoffmann's anodyne?

Discussion.

As the preparation contains 32.5 per cent. of ether, 60 minims (1 teaspoonful) would contain 32.5 per cent., of 60 minims of ether—0.325 x 60 = 19.500 (minims of ether).

The approximate amount may be found as follows:

As the spirit is about ⅓ ether and a teaspoonful is about 60 minims, ⅓ of 60 is 20 (minims of ether).

---

(27) How much tartar emetic in 2 teaspoonfuls of the compound syrup of squills?

Discussion.

As the preparation contains 0.2 per cent. of the salt, and 2 teaspoonfuls is 120 minims it would contain 0.2 per cent. of 120, or 120 x 0.002 = 0.240 (or about ¼ grain).

---

(28) Through error a patient swallowed a teaspoonful of a mixture of equal parts of tinctures of iodine and aconite. How much actual iodine did the patient get?

Discussion.

As the tincture of iodine is a 7 per cent. solution, and a teaspoonful (60 minims) of the preparation was taken, and it was half tincture of iodine, the patient received 30 minims of tincture of iodine containing about 7 grains to each 100 minims—7 per cent. of 30 = 30 x 0.07 = 2.10 (grains of iodine).

---

(29) Write a prescription calling for 2 ounces of an ointment containing 1 per cent. phenol and 5 per cent. zinc oxide—use the ointment of zinc oxide instead of the salt.

Discussion.

An ounce by weight is 480 grains (apothecaries), so the amount of phenol to make 1 per cent. in 1 ounce is 1 per cent. of 480 or 4.8 grains. Five per cent. would be five times that much, or 5 x 4.8 or 24 grains. For a 2 ounce ointment, twice as much would be required, or 9.6 grains phenol and 48 grains zinc oxide. Zinc oxide is hard to properly incorporate, so the U. S. P. 20 per cent. ointment should be employed. If the ointment contains 20 per cent. of the salt, each 5 parts of the ointment contains 1 part of the salt. If 48 grains of the salt is required, five times that much of the prepared ointment would be necessary—48 x 5 or 240 grains, or 4 drachms.

Name, etc. Date,

℞

Phenolis ..... gr. x
Ung. Zinci Ox. ..... ʒiv
Petrolati .....q. s. ℥ij
M.
Sig.—Apply as directed.

(Over) Signature.

Directions may be given on back of prescription to melt the phenol and petrolatum and incorporate while hot, or the necessary amount of the U. S. P. phenol ointment may be ordered.

---

(30) Write a prescription for an office solution containing about 1 per cent. cocaine and 3 per cent. of antipyrine.

Discussion.

A fluidounce of water weighs about 450 grains, so the amount of a salt required to make a 1 per cent. solution in 1 fluidounce is 1 per cent. of 450 or 4.5 grains. Three per cent. would require three times 4.5 or 13.5 grains. Approximate quantities are usually employed. As the solution does not keep well, a small quantity is usually ordered.

Heading showing address, registry number, etc.

Name, etc. Date,

℞

Cocainæ Hydrochl. ..... gr. v
Antipyrinæ ..... gr. xv
Aquæ Dest. .....q. s. f℥j
M.
Sig.—Formula. Signature.

---

(31) A physician wished a patient to use a 1 to 500 quinine solution to irrigate the colon in the treatment for pinworms. Write the prescription necessary.

Discussion.

Quinine alkaloid, sulphate or tannate would not dissolve in this strength. The hydrochloride would answer well. One grain to the fluidounce makes a little more than a 1 to 500 solution, so about 15 grains to the pint, or 60 grains to the half gallon, would be required.

Name, etc. Date,

℞

Quininæ Hydrochlor. ..... ℥j

Sig.—Use to half gallon of warm water as directed.

Signature.

---

(32) Write a prescription for a solution of potassium permanganate so that when a teaspoonful is added to a quart of water it will make a solution of about 1 to 5000.

Discussion.

A quart of water weighs nearly 15,000 grains, so 3 grains of the salt would be the amount necessary in each teaspoonful.

Name, etc. Date,

℞

Potassii Permangan. ..... gr. L

Aquæ Dest. .....q. s. f℥ij

M.

Sig.—Use teaspoonful to quart of water as directed.

Signature.

---

(33) You wish to have a patient use douches of a gallon of 1 to 5000 potassium permanganate solution. Write the necessary prescription.

Discussion.

A pint of water weighs about 7500 grains, so 1½ grains of the salt would be required for 1 pint. A gallon contains 8 pints, so would require about 12 grains. Tablets are inconvenient for patient's use and a solution should be ordered. It should be so concentrated that the smallest possible domestic measureful can be added to a gallon of water to give the required strength. Twelve grains will just comfortably dissolve in ½ fluidounce (1 tablespoonful) of water. If about a dozen douches are indicated the prescription should be for 6 fluidounces as follows:

Name, etc. Date,

℞

Potassii Permangan. ..... ℥iiss

Aquæ Dest. .....q. s. f℥vj

M.

Sig.—Use tablespoonful to gallon of hot water as directed.

Signature.

(34) If you wish to prescribe a solution for a wet bichloride dressing for a poor patient, how will you write the prescription so that the patient can use 1 part to 10 parts of water and get a solution of about 1 to 5000?

Discussion.

An ounce of water weighs about 450 grains, so 1 grain of the salt would give a solution (by weight) of about 1 to 450. If 10 more ounces of water (about 4500 grains) are added to this, it gives a solution of about 1 to 5000.

Name, etc. Date,

℞

Hydrarg. Chlor. Corros. ..... gr. iv
Acidi Tartarici ..... gr. xx
Aquæ Dest. ..... q. s. f℥iv
M.
Sig.—Use 1 part to 10 parts of water to wet dressing.

Signature.

---

(35) Write a prescription for mercurial inunctions so that each dose will contain about 15 grains of metallic mercury.

Discussion.

The official ointment is too strong for continued use and the diluted is undesirable for systemic effect on account of the petrolatum content. The ointment contains 50 per cent. of metallic mercury, and if diluted half it will contain 25 per cent. If it is arranged to use 1 drachm of this ointment to each inunction it gives 15 grains of mercury.

Initials of patient. Date,

℞

Ung. Hydrargyri,
Adipis Lanæ Hyd. ..... āā. ℥j
M. ft. cht. cer. no. xvj.
Sig.—Apply one each night as directed.

Signature.

---

(36) Write a prescription for chloroform liniment and soap liniment to make 6 fluidounces, so that the finished product will contain about 10 per cent. of chloroform.

Discussion.

Chloroform liniment contains 30 per cent. of chloroform and the solution wanted is one-third as strong (10 per cent.), so if one-third of the prescription is chloroform liniment, it will give the necessary reduction.

The percentage strength of the preparation (30) is to the percentage strength desired (10), as the number of ounces of prescription (6) is to the number of ounces of the preparation required (×).

$$30 : 10 :: 6 : \times = 2.$$

Name of patient, etc. Date,

℞

Lin. Chloroformi ..... f℥ij

Lin. Saponis .....q. s. f℥vj

M.

Sig.—Apply as directed.

Signature.

---

(37) A mother gave her baby five feedings of 6 fluidounces each. Her formula calls for 6 per cent. of lime water. How much calcium hydroxide does the child receive daily?

Discussion.

Five feedings of 6 fluidounces each totals 30 fluidounces; 6 per cent. of this is 1.8 fluidounces (lime water). Lime-water contains about 0.14 per cent. of calcium hydroxide—0.14 per cent. of 1.8 fluidounces (864 minims) = 0.0014 x 864 = 1.2 (grains calcium hydroxide).

---

(38) Write a prescription for a 4-fluidounce saturated solution of boric acid.

Discussion.

It is not practical to get a solution as concentrated as would be indicated by the stated solubility of the drug, as that only indicates the total amount soluble under the most favorable conditions and by the expenditure of unlimited time. If a prescriber merely orders a "Saturated Solution," the druggist usually triturates an excess of the drug with water for a few moments and filters. It is better to prescribe a definite amount and know what the patient is receiving.

Boric acid is stated to be soluble in 18 parts water. That is 1 grain to dissolve in about 18 minims of water, but practically it is best not to order over 1 grain to 20 minims of water, or 24 grains to the fluidounce (480 minims).

Name of patient, etc. Date,

℞

Acidi Borici ..... ℥iss

Aquæ Dest. .....q. s. f℥iv

M. ft. sol.

Sig.—Apply locally as directed.

Signature.

(39) Write a metric prescription calling for 3 fluidounces of a saturated solution of potassium chlorate.

Discussion.

Potassium chlorate is said to be soluble in 11.5 parts of water or 1 grain in about 11.5 minims of water, but, making the usual allowance, as suggested in discussing the previous problem, it is better not to use more than 1 grain to 15 minims, or 32 grains to the fluidounce (480 minims), or 90 grains to the 3 fluidounces. Using the rule for transposing to metric equivalents (p. 336), the prescription would be as follows:

Name of patient, etc. Date,

℞

Potassii Chloratis ..... 6|
Aquæ .....q. s. 90|
M. ft. sol.
Sig.—Use for throat as directed.

---

(40) What may occur when a wet bichloride dressing is applied to a surface previously painted with tincture of iodine?

Discussion.

The following reaction may result : $HgCl_2$ plus 2 I = HgI_2 plus 2 Cl. Red mercuric iodide is a powerful irritant, and may cause extensive vesication, etc.

---

(41) In the following prescriptions what mercurial salt does the patient get, and how much at a dose?

℞

Hydrarg. Chlor. Corros. ..... gr. ij
Potassii Iodidi ..... ʒvj
Aquæ Dest. .....q. s. fʒvj
M.
Sig.—Teaspoonful in water after meals.

Discussion.

Mercuric chloride with potassium iodide forms the red mercuric iodide, which, in the presence of an excess of the potassium iodide, forms the potassio-mercuric iodide. The molecule of mercuric chloride is $HgCl_2$ with a molecular weight of about 270. The molecule of red mercuric iodide is HgI_2 with a molecular weight of about 450, so for each 270 parts of the chloride used 450 parts of the iodide are formed. If $\frac{1}{24}$ of a grain of the chloride is ordered for each dose (2 grains in 48 doses), the resulting iodide of each dose is found by the following:

$\frac{1}{24} : x :: 270 : 450 =$ about $\frac{1}{14}$ grain at each dose of red mercuric iodide in the form of potassio-mercuric iodide.

(42) What does the patient get in the following prescription, and how much sodium bicarbonate is required to neutralize the acid?

℞
Acidi Salicylici 3iv
Sodii Bicarbonatis,
Aquæ .....q. s. f5vj
M.
Sig.—Tablespoonful in water each evening at 4, 6, 8 and 10.

Discussion.

Sodium salicylate and carbon dioxide are formed so the patient gets a freshly formed sodium salicylate in water charged with carbon dioxide.

Salicylic acid had the chemical formula $HC_7H_5O_3$ which has the molecular weight of about 138. Sodium bicarbonate has a formula $NaHCO_3$, which has a molecular weight of about 84. So for each 138 grains of the acid 84 grains of the sodium salt will be required. The prescription calls for 240 grains of the acid, so the amount of bicarbonate is found as follows:

240 : x :: 138 : 84 or 146 grains of the sodium bicarbonate. It is usually considered better for therapeutic reasons to prescribe an excess of the bicarbonate, say 4 drachms for this prescription.

---

(43) Demonstrate why the compound tincture of cinchona cannot be used in the treatment of malaria.

Discussion.

This preparation represents 10 per cent. of cinchona, and cinchona contains about 5 per cent. of alkaloids (about 4 per cent. of quinine), so a teaspoonful (60 minims) of the tincture represents 6 grains of cinchona, about $\frac{1}{20}$ of which is active ($\frac{1}{20}$ of 6 is $\frac{6}{20}$, or about $\frac{1}{3}$ grain). If it contains about $\frac{1}{3}$ grain of alkaloid to 1 fluidrachm, it would require 3 fluidrachms to yield 1 grain, or 90 fluidrachms (nearly a pint), to give a day's treatment. The alcohol, tannic acid, bad taste, etc., would be intolerable.

---

(44) Write a prescription for quinine for malaria in a child 6 years old, based on 30 grains per day for an adult.

Discussion.

A child 6 years old should receive one-third the adult dose (Young's rule); this would be 10 grains per day. Following the custom of dividing into about five daily doses, it would give 2 grains per dose. A child this age can seldom swallow a capsule and would not take a bitter solution. In making a tasteless mixture a nearly insoluble salt should be used. The sulphate is the most desirable common salt. Two grains of

this can be conveniently disguised in a teaspoonful of syrup. The usual three (or more) days intensive treatment should be ordered.

Name and age of patient. Date,

℞

Quininæ Sulph. ..... ℥ss

Syr. Chocolatæ .....q. s. f℥ij

M.

Sig.—Teaspoonful each morning at 7, 8, 9, 10 and 11. (Shake-label.) Signature.

---

(45) What would be the daily amount of quinine for the first few days of the treatment of malaria in an adult weighing 75 pounds if the average adult dose was 30 grains?

Discussion.

An "average dose" means the dose for an average man. In using drugs for systemic effect by absorption into the blood, it is usually intended to secure a certain percentage concentration—so much of the drug to so much blood. The probable amount of blood is based largely on the size of patient, so a patient about half the average size would usually receive half the average dose, which would give about 15 grains of quinine for this patient.

---

(46) One doctor gives 30 grains quinine sulphate, another gives 30 grains quinine hydrobromide. Demonstrate which gives the most of the alkaloid.

Discussion.

Quinine sulphate has the formula $(C_{20}H_{24}O_2N_2)_2H_2SO_4 + 7H_2O$, which has the molecular weight 872, the quinine $2(C_{20}H_{24}O_2N_2)$ being 648 and the sulphate radical and water $(H_2SO_4 + 7H_2O)$ being 224. Quinine hydrobromide has the formula $C_{20}H_{24}O_2N_2HBr + H_2O$, which has the molecular weight 423, the quinine being 324 and the hydrobromide radical and water $(HBr + H_2O)$ being 99. So quinine sulphate is 74 per cent. quinine ($^{648}/_{872}$), while quinine hydrobromide is 76 per cent. quinine ($^{324}/_{423}$), 74 per cent. of 30 is 22.2 (grains of quinine in 30 grains of quinine sulphate), 76 per cent. of 30 is 22.8 (grains of quinine in 30 grains of quinine hydrobromide).

---

(47) Demonstrate which official quinine salt contains the larger percentage of quinine.

Discussion.

The official salts, with the formulæ and molecular weights of their acid radicals and water of crystallization, are as follows: Bisulphate ($H_2SO_4 + (7H_2O) = 224$), dihydrochloride ($2HCl = 72$), hydrobromide ($HBr + H_2O = 98$), hydrochloride ($HCl + 2H_2O = 72$), sulphate ($H_2SO_4 + 7H_2O = 224$), salicylate ($HC_7H_5O_3 + H_2O = 156$), the radical in quinine and urea hydrochloride ($HClCO(NH_2)_2HCl + (5H_2O)H_2O = 222$). Quinine sulphate contains 2 quinine radicals to each acid radical, so the 224 should be divided by 2. Quinine tannate is not constant in composition, but as it only contains from 30 to 35 per cent. of quinine, it is out of consideration. As the quinine radical ($C_{20}H_{24}O_2N_2$) is constant in all, the salt having the lightest radical naturally has the largest percentage of quinine alkaloid. This shows the hydrochloride and the dihydrochloride to contain the largest percentage of the alkaloid.

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